A critical review of graduate employability skills : lessons from the Maltese experience

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I dedicate this thesis to my husband Conrad and our sons Edward and Andrew

Abstract

This study examines how institutional actors interpret, influence and respond to skills availability in the labour market for graduates. It researches and draws lessons from the Maltese experience of managing graduate employability over three decades, focusing on the three fastest-growing economic sectors, namely, Accountancy, Pharmachem and ICT, each of which is the subject of a case study. The study investigates the interaction of governments, firms, higher education institutions and professional associations in identifying skills shortages and gaps, as well as in devising policy frameworks and skills regimes at national, sectoral and corporate levels.

Drawing upon theories of employability and employee skills, first, there is development of an analytical framework to examine how these institutional actors affect the labour market, which informs the analysis of the three case studies. The qualitative research involved an interpretative analysis of key policy documents related to graduate employability and seventy in-depth interviews with interlocutors positioned in strategic policy making, senior management, academic, expert and professional leadership roles within government, regulators, major corporations, higher education institutions, training providers and professional associations. The data was thematically analysed.

Twelve key themes emerged from the in-depth interviews, which included the following: use of different language; the meaning of employability; the value of credentials; the role of the University; perceptions; expectations; competitiveness; modes of training provision; labour mobility; placements and incentives; collaboration and skills gap. The institutional actors across the three focal sectors, namely, accountancy, pharmachem and ICT tended to emphasise some themes more than others, these having previously been identified in scholarly literature (Appendix 1). Both patterns and inconsistencies emerged from a comparison of the accountancy, pharmachem and ICT sectors. In so far as the labour market is concerned, the study revealed a lack of technical skills and major non-technical graduate skills gaps, specifically, in the aspects of communication, teamwork and problem-solving. A number of professional characteristics or behaviours were also identified as lacking with Accountancy, Pharmachem and ICT graduates, namely, attitude, confidence, drive, professional outlook, independent working, personality fit and a *'can do'* approach.

The study revealed the absence of permanent systemic connections between the formulation of national and sectoral economic strategies on the one hand, and higher education and training policies on the other. Consequently, state higher education institutions have been responding reactively to labour market needs, which could explain the endemic skills gap which the study found.

The study concludes by discussing limitations and limits to this research as well as recommending policy initiatives and further research that could contribute to the science and practice of public policy in this field.

Key words: graduate employability, employability skills, skills gaps, policy makers, labour market

List of Abbreviations

ACA	Association of Chartered Accountants
ACCA	Association of Chartered Certified Accountants
API	Active Pharmaceutical Ingredient
APQRU	Academic Programmes Quality and Resources Unit
CA	Collective Agreement
CD	Commerce Department
CEPIS	Council of European Professional Informatics Societies
CIMU	Central Information Management Unit
CMTU	Confederation of Maltese Trade Unions
CPD/CPE	Continuing Professional Development or Education
CTO	Chief Technical Officer
DPA	Directorate of Pharmaceutical Affairs
EAFP	European Association of Faculties of Pharmacy
EC	European Commission
ECC	Educational Consultative Council
ECTS	European Credit Transfer Accumulation System
ECVET	European Credit System for Vocational Education and Training
EES	European Employment Strategy
EHEA	European and Higher Education Area
EIPG	European Industrial Pharmacists Group
EMA	European Marketing Authorisation
EMEA	Evaluation of Medicinal Products
EQF	European Qualifications Framework
EPC	European Patent Convention
EPSAs	European Public Sector Accounting Standards
ESCO	European skills/competences, qualifications and occupations
ESF	European Social Fund
ETC	Employment and Training Corporation
EY	Ernst and Young
FDA	Food and Drug Administration
FDI	Foreign Direct Investment
FEMA	Faculty of Economics, Management and Accountancy
FHRD	Foundation for Human Resources Development
FIP	International Pharmaceutical Federation
GAAP	Generally Accepted Accounting Principles
GMP	Good Manufacturing Practice
GRTU	General Retailers and Traders Union
GWU	General Workers Union
HE	Higher Education

HEI	Higher Education Institution
IAESB	International Accounting Education Standards Board
IAS	International Accounting Standards
ICAEW	Institute of Chartered Accountants in England and Wales
ICE	Institute of Computer Education
IDA	International Dispensary Authorisation
IFAC	International Framework of Accountants
IFRS	International Financial Reporting Standards
IFS	Institutional Financial Services
IFTAC	Institute for Fibre Optic Training and Certification
IIA	Institute of Internal Auditors
IMP	Investigational Medicinal Product
INSEAD	*Institut Européen d'Administration des Affaires* (European Institute for Business Administration)
IP	Intellectual property
IPRD	Industrial Property Registrations Directorate
ISA	International Standards of Accounting
ISACA	Information Systems Audit and Control Association
ISCED	International Standard Classification of Education
ISD	Information Systems Division
ISSP	Information Systems Strategic Plan
ITS	Institute of Tourism Studies
JEP	Joint Assessment of Employment Policy
JES	Joint Examination Scheme
KPMG	Klynveld Peat Marwick Goerdeler
LFS	Labour Force Survey
LMPs	Labour Market Policies
MA	Medicines Authority
MCCEI	Malta Chamber of Commerce, Enterprise and Industry
MATSEC	Matriculation and Secondary Education Certificate
MCA	Malta Communications Authority
MCE	Malta College of Education
MCAST	Malta College of Arts, Science and Technology
MCPP	Malta College of Pharmacy Practice
MCST	Malta Council for Science and Technology
MA	Marketing Authorisation
ME	Malta Enterprise
MEA	Malta Employers Association
MEDE	Ministry for Education and Employment
MEU	Management Systems Unit

MFSA	Malta Financial Services Authority
MGSS	Malta Government Scholarship Scheme
MGUS	Malta Government Undergraduate Scheme
MIA	Malta Institute of Accountants
MIM	Malta Institute of Management
MIT	Malta Institute of Taxation
MITA	Malta Information Technology Agency
MITC	Ministry for Infrastructure, Transport and Communications
MITTS	Malta Information Technology and Training Unit Ltd
MQC	Malta Qualifications Council
MQF	Malta Qualifications Framework
MQRIC	Malta Qualifications Recognition Information Centre
MSU	Management Systems Unit
NCC	National Computer Centre
NCFHE	National Commission for Further and Higher Education
NEA	National Employment Authority
NEP	National Employment Policy
NSO	National Statistics Office
NSIT	National Strategy for Information Technology
NTIL	Nucleus Training International Ltd
OECD	Organisation for Economic Co-operation and Development
OR	Operations Review
PER	Practical Experience Requirement
PRIMA	Pharmaceutical Research Based Industry Malta Association
PSRC	Public Service Reform Commission
PVC	Programme Validation Committee
PWC	Price Waterhouse Coopers
RCA	Richard Clarke Academy
RP	Responsible Person
RPSGB	Royal Pharmaceutical Society in Great Britain
RTDI	Research, Development, Technology and Innovation
SEC	Secondary Education Certificate
SME	Small and Medium Enterprises
SOP	Standard Operating Procedures
STC	Swatar Training Centre
UHM	*Unjoni Haddiema Maghqudin*
UNICEF	United Nations International Children's Emergency Fund
VET	Vocational Education and Training
VoC	Varieties of Capitalism
WEF	World Economic Forum

Chapter 1: Setting the Scenario: Skills Formation

"Globalisation and technological advances have in part, contributed to the emergence of the knowledge economy with a focus on employability skills' requirements."

(Hillage and Pollard, 1998, p.1)

1.1 Changing Scenarios: economic and educational

One of the main challenges for Malta is how to improve connections between tertiary education and the labour market so as to equip graduates better with appropriate employability skills and to meet employers' job requirements. This constitutes a major policy concern for higher education. "The emphasis on national skills and the development of employability skills is not a new preoccupation for education providers or policy makers" (Cranmer, 2006, p.169) and this is an issue that concerns Malta as much as any other country. Research in this field has stressed that employability skills are essential for business competitiveness.

> "The employment levels and how work is carried out are influenced by a number of factors which include technological advances, skills gaps and mismatches, untapped talent and income growth disparity" (Manyika et al., 2012, p.1).

These broad trends are explored in chapter five.

European countries want to be "competitive and dynamic in their knowledge based economy in the world" (OECD, 1996, p.10), which means an increase in levels of skills requirements is necessary. A Europe without borders implies that the education level and the skills of a country's workforce should lead to high value added competitiveness and increased standards of living. "EU countries are meeting in different fora to strive towards a leading knowledge-based economy" (Longhurst, 2010, p.151). The objectives of the various fora, for example, the Bologna and Copenhagen processes (Appendix 17), are to push forward a common agenda of reform in education to become a 'leading knowledge-based economy' (OECD,

1996; NCHE, 2009; Business Innovation and Skills, 2011b). Malta (EU Member States Report, 2008) is participating in the Bologna and Copenhagen processes as well as the education and training 2010 work programme (Appendix 17). The country is also involved in other Higher Education initiatives and tries to ensure that any decisions made, take into account small states' perspectives.

> "Smaller states have a set of geopolitical characteristics in common such as close-knit environments, central administration, informal internal structures, limited number of domestic actors, small internal markets and specialised open economies" (Warrington and Milne 2007, p.170).

Some of the characteristics of small states are the following:

> "they are small in size; they have a narrow economic base; are economically dependent on larger markets for investments; have a small population and therefore a limited pool of skills; high population density; paucity of natural resources; geographical isolation and high-end production systems that are vulnerable" (Bass et al., 1995, p.28).

These characteristics are different to larger states and may affect how the formation of skills regimes takes place. The small size of these states, like Malta, "is a guarantee that things get done more quickly" (Mr. C. McCreevy, European Commissioner for the Internal Market, 2009). On the other hand, some researchers have argued that because of vested interests, more time is taken to make decisions.

Educational systems in small states have attracted scholarly interest and "very often, the educational development of small states is viewed as a smaller version of bigger states, which is not simply the case" (Baldacchino, 2011, p.457). In this context, there is a set of factors at play that lead to the recommendation of certain "strategies in small states of the world" (Baldacchino, 2011, p.457). Harrigan (1972 cited by Bray, 1990, p.265) contended that "small countries have their own identity, know their limitations and prioritise, restructure and redesign their institutions according to need." Small states face educational challenges particular to them, with some of the limitations including the ability "to achieve economies

of scale in the provision of educational services and the impact of social relations on the administration and supervision of educational services" (Bacchus, 2008, p.127). These matters are discussed at length in chapters 2 and 5.

Small states cannot change their size, but they can develop and utilise their human resources to be able to face globalisation and technological change. This will require greater flexibility of skills and knowledge because organisations are automating their processes and need high skills. The appropriate educational credentials and technical skills are essential so that these industries can continue to compete internationally. Furthermore, students' initiative and creativity are distinctive of a sound educational programme, characteristics which become more important in small states. Small-scale societies (like Malta), which attract new industries need the local human resources to be flexible and adaptable so as to take on new ideas and patterns of behaviour. Lack of these characteristics in the labour force may cause organisations to set up in other countries offering high skills underpinned by high levels of flexibility.

The relevance of education and acquired employability skills, rather than certificates, are crucial factors in being employed. Graduates increasingly are having to be more innovative and entrepreneurial in creating opportunities and searching for labour market openings. Since Malta's labour market is small,[1] any job mismatches between graduate supply and demand can be reduced by internal mobility. However, this calls for efficient and accurate planning. The implementation of a skills strategy can promote high skills, high value added quality products and an increased income. "Tertiary education has become a major factor of economic competitiveness in an increasingly…global economy…" (Kupfer, 2012, p.71). Governments everywhere have been "urged to invest in and reform education which serves as an impetus to improve the employability skills needed for the labour market" (Darr and Warhurst, 2008, p.34). In a smaller state, this urgency is greater, as explained in detail in chapter 2.

[1]According to the 2013 Eurostat data, the EU-28 activity rate (ages 15-64) is 71.7%. Malta's activity rate, in 2013 (between ages 15-64) was 63.1%, which is the second lowest after Croatia (60.5%). Croatia only joined the EU in July 2013.

1.2 Consequences for the Labour Market

The pressures for more and better skills have intensified. "Low-skilled jobs tend to be automated and high skilled jobs are retained" (Noyelle, 1986, p.106). In a changing economy, information technology is a tool that has become essential in virtually all sectors. This catalyst for change, together with globalisation and demographics, has caused changes in the world of work that have had an effect on the skills acquisition in educational institutions and at the workplace.

To keep pace with work developments, the content and training of education are also under pressure to change. The "higher education institutions provide knowledgeable and skilled graduates to match labour market requirements" (Allen and De Weert, 2007, p.59). "A key issue for employers and employees would be the link between career paths, skills development and skill maintenance" (Longhurst, 2010, p.152). Occupational skills need to be updated throughout a person's employed life, because jobs are no longer for life. Consequently, "there is a move from rigidly structured courses to a modular approach based on cumulative credits and intermediate certificates" (Mayer and Solga, 2008, p.55).

Knowledge and skills are the pillars of this new economy and directly affect competitiveness. Key institutional actors (which include government, higher education institutions, employers, private education providers and unions) are instrumental in increasing and adapting the knowledge and skills levels (i.e. beginner, advanced as well as expert levels in technical, soft and academic skills). Employers are increasingly demanding a high skilled labour force and governments are making efforts to ensure that there are good educational and training systems. In a statement made by the European Commission, the Maltese Government's role is to shape "the structure, organisation and develop the content of the country's educational training. It is responsible for shaping a learning society" (European Commission, 2010, p.18). It is expected that employers will train their workforce and that individuals are responsible for their own skill development so as to make them employable.

"Globalisation and technological advances have in part, contributed to the emergence of the knowledge economy, with a focus on employability skills'

requirements" (Hillage and Pollard, 1998, p.1). However, progress in technological advancement does not automatically imply economic growth.[2]

> "If there is no investment in skills development, countries (including Malta) cannot compete in a knowledge-based global society. As labour markets evolve, individuals may lose their skills if they do not keep up to date" (OECD, May 2012, p.10).

There is a consensus that skills are of paramount importance, but this is not necessarily the case when it comes to prioritising which skills would make the difference. Employers may have an understanding of what is taught and learnt during a course and/or tertiary education programmes. '*Work skills*'[3] as they are termed, include skills in information and communication technology (ICT), how to solve problems, working as teams, supervising and leading. Training will need to be organised on a continual and systematic basis, for updating employability skills which will help individuals to adapt to a world that is constantly changing.

1.3 Pressures on Education and Training Institutions

Higher education contributes to a knowledge-based economy. "Universities are increasingly required to produce highly mobile graduates able to respond to the ever-changing needs of the contemporary workplace" (Andrews, 2008, p.411). However, Brown et al., 2008 warn that this will be unlikely for all jobs, arguing that there has been a significant growth in jobs that do not require formal or low level qualifications.

> "Universities are one of the institutions that contribute to skill formation. They have expanded and continue to do so as Government policy is to increase tertiary enrolment in order to meet employers' requirements" (Warhurst, 2008, p.71).

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[2] In Malta, GDP per capita is 20339.91USD (2013).
Available from: http://www.tradingeconomics.com/malta/gdp-per-capita-ppp. [Accessed 12/10/2013].

[3] *Work Skills'* highlighted in the workplace skills wheel include industry-wide technical skills, computer literacy, independence and initiative, attendance and self-presentation, leadership and teamwork, career development, work ethic, positive attitude, understanding the big picture, reasoning, problem solving and decision making, communication along with academic skills.
Available from: http://www.iftf.org/uploads/media/SR-1382A_UPRI_future_work_skills_sm.pdf [Accessed 21/08/2013].

As a result, universities have been receptors of students in large numbers (Henkel, 2000; Crossley et al., 2001; Morley, 2003; Mayhew et al., 2004). As Warhurst, (2008, p.71) states, "that for people to become a knowledge worker they need to invest in a University education." However, most small states do not have their own university. Some, like those of the South Pacific and Caribbean share universities which are among the most successful regional institutions (Professor E. Warrington. [*pers. comm.*] 2 August 2013).[4]

'Massification' does not simply mean increasing the numbers of students attending higher education (Moreau and Leathwood, 2006; Boden and Nedeva, 2010). For it also covers what university education is and the "rapport between universities and the states that fund and regulate them" (Borden and Nedeva, 2010, p.37). However, attention has to be paid towards the drive to boost the numbers of students entering higher education, because may potentially dilute the value of credentials, or create an oversupply and hence, lead to the underemployment of graduates.

When qualifications are greater than the requirements for the job in certain sectors of employment, these cause a problem. With an increased supply of graduates, organisations would prefer to raise the requirements of employment without changing the job specifications to be undertaken by them. Some graduates are not employed in jobs commensurate with their qualifications and skills. "This means that these graduates are underemployed inferring a mismatch in the labour market" (Warhurst, 2008, p.75). "Better jobs are not being created because there are more graduates in the labour market. These jobs can be done by graduates but are not the level of a graduate" (Warhurst et al., 2008, p.75), which in effect, this leads to underemployment in certain disciplines. Brown, (1999, p.234) argues that "countries respond to higher skills challenges for employers depending on the key actors of skills formation and the balance of power that support and maintain them."

[4]Malta became a republic on the 13 December 1974 and joined the EU in 2004, together with Slovenia, Cyprus, Latvia, Estonia, Lithuania and Slovakia.

Global changes unfold at a national level with the intervention of divergent historical, political and social/cultural contexts of skills formation (Ashton and Green, 1996; Brown and Lauder, 1996; Ball, 1998; Brown, 1999; Brown et al., 2001; Crouch et al., 2004; Green, 2006; Rizvi and Lingard, 2010; Durrant, 2012). This is a critical point for this thesis as it highlights the importance and significance of understanding what skills policies are being adopted by the state and why. The crucial issue that needs to be addressed is whether these policies are focused on reducing the skills gaps in relation to graduate employability.

1.4 The Research Questions and Scope of Study

The following research questions are posed in order to guide this thesis.

RQ1. How do key institutional actors (referred to as skill formation institutions) seek to interpret, respond to and influence perceived gaps in graduate employability skills:

RQ2. What effect do the institutional actors have on the modes of skills provision of graduate employability skills?

RQ3. What are the skills policies that contribute to developing a skilled workforce in a continually changing labour market and what influences the choice and content of these policies?

RQ4. Which skills gaps are endemic to the graduate labour market?

To address these questions, the scope of this thesis is set out to critically analyse how the different institutional actors influence and contribute to the current educational and labour market policies in relation to graduate employability. The focus is on the importance of skills formation and graduates' employability in a continually changing market. Malta's national skills formation system will be the focus of this study and will be explored by means of three case studies.

Institutional settings for providing skills have developed differently in the face of demands for highly skilled labour. A number of issues come to mind, such as the policies that guide institutional actors to contribute to skills formation and what their role has been in shaping and regulating training systems. The consequences of varying national systems and their path dependencies for the qualifications they are able to provide, require adaptation to changing requirements. "University

degree attainments may just be considered as credentials that lead to demanding and rewarding jobs or may be conditional for the performance of the job" (Mayer and Solga, 2008, p.52). The study also involves exploring the definition of skills and whether there are any skills gaps between higher education and the Maltese labour market in selected disciplinary areas. This thesis tests the conceptual and analytical frameworks that are consistent with the analysis of qualitative data.

1.5 The Importance of this Research

Employability skills are important to individuals as they help them to adapt to a changing, complex and interdependent world. They need to be relevant so that individuals can utilise them, learn and adapt to a continually and rapidly changing technological world. There are several definitions of employability skills that are discussed in the literature, which help to provide an understanding regarding skill formation processes. Societies, including Malta, have however:

> "developed historically quite different institutional settings for providing skills. The involvement of the state, trade unions and employer associations have played a part in shaping and regulating different training systems" (Crouch et al., 2004, p.30).

The importance of this research demonstrates a real contemporary need and complements a national employee Skills Gap Survey recently launched in February 2016.[5] The aim of this Survey was:

> "to gauge the extent of the existing skills gap and provide policy makers with the information necessary to identify the potential shortcomings of the Maltese labour market that could be hindering companies from finding employees with adequate skills" (NCFHE, 2016).

My research explores the institutional actors' perceptions on graduate skills availability in three selected disciplines, namely Accountancy, the Pharmaceutical

[5]The National Commission for Further and Higher Education (NCFHE) in partnership with the Employment and Training Corporation (ETC) (known today as JobsPlus) and Malta Enterprise (ME) launched an employee skills gap survey, 2016.

industries and ICT and, together with the results of this national survey will contribute to contemporary policy formulation aimed at providing Malta's labour market with an adequate set of skills. Further, European countries aim to comprise the largest knowledge-based economy by the year 2020. Malta has backed this trend and joined the large EU countries on this road to such an economy. This small island can be seen as a test case in relation to adopting European policy, whereby lessons from the Maltese experience can be learnt by other small countries or non-EU small states.

The principal data sources will include a combination of documentary and archival data, statistics along with in-depth semi-structured interviews with the institutional actors regarding their views on employability skills. The lattermost includes the policy makers, higher education institutions, professional associations, unions, private training providers and private employers.

1.6 Outline of the Chapters

Having positioned this study in relation to the effect that institutional actors (skill formation institutions) in a small island state have on graduate employability skills and their current modes of provision and having presented the research question(s) and scope of enquiry, the remaining eight chapters of the thesis progress as follows:

Chapter two focuses on Malta's significance from the point of view of a study of graduate employability. Malta is a conveniently-bounded policy environment. It has no physical natural resources and is highly dependent on its human resources. This chapter gives an outline of the strategy for development and for higher education policy in Malta.

Chapter three focuses on the leading discourses of graduate employability: the link between the education and employment world to meet the labour demand. "The importance of employability skills in a context of changes in the labour market and the higher education sector [in Malta]" (Moreau and Leathwood 2006, p.305) are discussed. Reference is made to a number of theoretical frameworks that include varieties of capitalism, Estevez-Abe et al., (2001) theory of the welfare

production regimes and the historical-institutionalist theory. Productivity is assumed to increase with employability skills, and graduates need to ensure they update their skills to remain relevant in the labour market. This chapter also discusses the employability skills gaps of selected sectors which are a growing concern for Malta's industry and its competitiveness.

Chapter four explains the interpretative paradigm adopted in this thesis and delineates the way qualitative data collection methods were applied in order to address the research questions. An inductive approach is adopted where the research is data driven. It allows meanings to emerge from the data to identify patterns and relationships (which are discussed in chapter 9). This chapter views the case study approach and evaluates the document analysis adopted to fulfil the research aims and objectives. It concludes by discussing the strengths and limitations of the research methodology adopted and the ethical issues surrounding this study.

Chapter five explores and analyses the skills gaps that are found and may exist with respect to the selected areas of excellence in the labour market. They are the accountancy, pharmachem and ICT sectors. These sectors have been chosen because they are at the cutting edge of the market in EU countries, including Malta and play a significant role in the economy. Reference is made to the importance of transferability in relation to these employability skills.

Chapter six is the first of the three sectoral case studies. it focuses on the skills formation institutions' roles, interpretation, influence and response to graduate employability skills in the accountancy area of excellence. The research design explores the modes of provision and whether skill formation institutions are addressing the skills gaps between graduates and employers. It attempts to interpret the main qualitative findings emanating from the selected conceptual and analytical frameworks cited in chapter 4. Chapters seven and eight adopt a similar format for the pharmachem and ICT sectors.

The last chapter presents the findings of this study. Then it draws out generalisable conclusions on the contributions and implications of the critical review of graduate employability skills in selected sectors in Malta. Where

appropriate, recommendations are postulated on developing a strategy for skills and how the issues of employability can be addressed in the labour market.

1.7 Conclusion

This first chapter has set the scenario regarding skills formation and the economic and educational changing circumstances in advanced economies, including Malta. "Employment levels and how work is performed are influenced by factors such as technology, skills gaps…, growth inequalities and untapped resources" (Manyika et al., 2012, p.8). "The education systems in small states have attracted scholarly interest" (Crossley et al., 2009, p.20), where relevance of education and acquired skills are crucial to finding employment. Malta's labour market is small and this would demand that graduates are entrepreneurial by "creating their own market opportunities" (Bacchus, 2008, p.128). Institutional actors such as higher educational institutions, Government, professional associations, unions, private education providers and employers are instrumental in how they respond to these challenges. This determines the "political economy of skills formation" (Brown et al., 2001; Crouch et al., 2004; Durrant, 2012, p.17).

Chapter 2:A national employability scenario: Skills formation, development and higher education in Malta

"A strong economy begins with a strong, well-educated workforce."
(Bill Owens, 2013, n.d.)

2.1 Introduction

This chapter examines how employability, skills formation, the socio-economic development trajectory and higher education in Malta are interlinked. It is necessary to understand the link between Malta's strategy for development and the country's higher education policy, including its guiding philosophy in order to appreciate the country's policies about employability.

Malta is the smallest member state of the European Union, having the smallest territory (316 km sq), population (c. 426,000 on 1 January 2016) and GDP (€8.8 bn estimated in 2015) (NSO, 2015). It is also the Union's most densely populated state. Its demographic profile is increasingly affected by an ageing national population, immigration from other member states as well as third country nationals. Its GDP per capita is expected to reach 97% of the EU average in 2017, up from less than 75% at the time of its accession to the Union (2004) (European Commission, 2016). Its economy is now dominated by services in tourism, finance, gaming and ICT. It attained Independence in 1964 after one hundred and fifty years of British rule, and acceded to the EU in 2004. Yet for centuries, it was governed by an elaborate, sophisticated state apparatus, initiated in the sixteenth century by the Hospitaller Knights of St John who held dominion over the islands, and evolving steadily since then (Warrington, 1997). These simple facts convey something of Malta's complexity, which is reflected in its politics, government and policy-making.

2.2 Two transitions: the strategy for socioeconomic development

Malta's strategy for socio-economic development can be summed up in the terms 'economic diversification', 'niche markets' and 'regional hub.' Between 1959 and the present, this entailed two significant transitions. The first of these, lasting between 1959 and 1987, transformed the political economy of an imperial fortress

subsisting on the expenditure and employment of the British armed services, into that typical of newly-independent small developing states, surviving on light manufacturing and tourism, benefiting from bilateral preferential trade and aid agreements, sheltering behind tariff and quota barriers (Pollacco, 2003). The second transition, beginning in 1987 and still in progress, turned Malta into an *entrepôt*, i.e., a regional services hub, fully open to trade in goods and services, seeking market niches in high-value services (finance, ICT) and manufacturing (ICT, pharmaceuticals) (Warrington & Milne, 2006). The State played the leading role in both transitions, variously acting as strategist, law-maker, regulator, planner, principal service provider, entrepreneur, venture capitalist, financier, employer and landowner. Notwithstanding the dissolution of loss-making public enterprises, and the privatisation of all but two major state enterprises (Air Malta and Enemalta), it retains a dominant role in health care, education, social security and public infrastructure, and remains the largest landowner and employer (Warrington and Pirotta, 2014, pp.105-135).

These transitions did not occur smoothly: in fact, they were characterised by endemic political controversy and several crises – in politics, industrial relations, foreign relations and the economy, all of which left some effect on higher education policy and institutions.

The sections that follow examine some landmarks in this scenario.

2.3 Educational objectives of Development Plans, 1959-1987

Between 1959 and 1985, Malta's strategy for development was embodied in a series of development plans that were influenced by human capital theory,[6] which views labour as a production input - a means to an end. Individuals attain general and job-specific knowledge from education and apply it in an expanding economy.

Malta's first Development Plan (1959-1964) envisaged a new economy based on tourism, agriculture and industry (Caruana, 1992). As the first Plan ended, the

[6]Human capital theory: human capital is the stock of knowledge, habits, social and personality attributes, including creativity, embodied in the ability to perform labour so as to produce economic value (Becker, 1964).

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United Nations Development Programme was asked to review the economic situation. It recommended a focus on export-oriented industries, to counteract dependence on the British armed services, and the establishment of a development corporation and central bank (Stolper, 1964). These and other objectives (Caruana 1992, p.42) were realised through the subsequent development plan. To ease the transition, while Malta attained independence in September 1964, it was agreed that British forces would remain until 1974, and that British aid for economic restructuring would be granted.

The Second Development Plan's (1964-1969) objectives were similar to the first. It envisaged an expansion of technical education since the industrial sector depended on the availability of highly skilled talent. The anticipated growth in building, manufacturing and tourism industries implied that educational requirements and human resource training and development were considered priorities (Stolper, 1964). Economic development was affected by:

> "the lack of experience and expertise in establishing educational programmes to meet the demands of industry, the inability to create new job opportunities and the outcomes of training efforts after several years to take effect" (Caruana, 1992, p.43).

Unemployment was also addressed by an emigration policy. Yet a second rundown of British forces caused numerous job losses. In 1967, a Joint Mission for Malta, led by Lord Robens, reviewed the Plan (Caruana, 1992, p.43).

The Mission recommended a strategy of expansion in manufacturing and tourism, which required appropriate institutions, such as a training and placement authority for job seekers. In the same vein, the Third Development Plan (1969-1973)[7] sought a sufficient rate of economic growth to provide jobs, to develop sectors that could stimulate growth, and to raise the standard of living as well as labour productivity. It emphasised export promotion and considered import substitution.

The Robens Report had recommended that higher education courses be made available to all who had the ability to succeed. Programmes were to provide broad, basic principles rather than narrow skills in specialised fields. This would

[7] Discontinued after the Labour Government's election in 1971.

also mean expanding technical education to supply skilled human resources to a labour-intensive economy. Higher education institutions were to revise their curricula to support economic, social and political goals. As a result, the Malta College of Arts, Science and Technology (MCAST) was established to support the drive towards industrialisation.

> "MCAST … was inaugurated … in 1970 to give the young Maltese nation … the opportunity to train its citizens towards a new context, that of … seeking challenging economic pastures" (Dr L. Galea, 2003, cited by the *Times of Malta,* April, 2003, p.6).

In 1971, the Labour Party was elected to Government and reforms, including educational ones, ensued (Zammit, 1984). The challenges remained the "development of economic independence, the diversification of a fortress economy and the creation of jobs to absorb all the workers working in the British Defence Sector" (Sultana, 1995a, p.200). The economic situation called for an educational policy that was relevant to the economy's needs. The new Government wanted to shift: "the educational system [which resembles the UK's system] from one that had followed the progress of the people and was still subservient to a colonial mentality into a dynamic system that could be shaped to bring about the desired social, cultural and political ends and needs" (Bezzina, 1995, p.21).

Restructuring of the compulsory education system in the 1970s involved establishing trade schools, focusing on vocational skills for students aged 14-16 and consolidating technical institutes. Technical education, introduced in 1972, became associated with low achievers. Unsuccessful attempts were made to co-opt private industry through two schemes, the Technician Apprentice Scheme (TAS) and the Extended Skills Training Scheme (ESTS) (Appendix 17). Apprentices earned state-subsidised wages, but were employed by private firms. Vocational education was being offered by several uncoordinated institutions, which could not grant their own certificates. The University of Malta considered technical qualifications to be of a low level, hindering technical students' smooth access to higher education. Academic/general and vocational/applied education were rigidly distinguished.

The Fourth Development Plan (1973-1980) emphasised the need to enhance industrial skills. "The Government wanted to shape a new Maltese society - egalitarian and socialist, but at the same time, industrial, independent and self-reliant" (Zammit Mangion, 1992, p.87). It proposed to harmonise the educational system closely with economic plans. Each student's development had to be linked to the need "to build a new Malta, with an independent economy based on industrial development and a full and wise use of its manpower potential" (L-*Orizzont*[8], 29 May, 1972, p.7 cited by Sultana, 1995b p.98). The Development Plan (1973-1980) defined the educational philosophy as being to:

> "provide equality and improvement of educational opportunity; promote greater awareness of the dignity, status and potential contribution to society of manual labour; move towards a system of education based on Malta's needs and culture – keeping in mind the importance of harmonising this system with that of Western Europe; develop independence of thought and a sense of responsibility among individuals" (Development Plan, pp.74-75).

Thomas Balogh, a leading development specialist, influenced the Government in favour of human capital theory (Balogh and Seers, 1995; Sultana, 1992). Higher education could provide the high level manpower needed for a growing economy. Whilst compulsory education and vocational training were essential, it was equally important to orient higher education towards economic expansion. As actual and projected manpower requirements could not be met by market forces alone, government intervention was necessary to establish a system that eliminated skill shortages in key sectors.

> "A thorough analysis of Malta's current situation was carried out. Estimates of employment and unemployment in major sectors, qualitative and quantitative surveys of occupations requiring higher education; identification of shortages and surpluses of manpower in key sectors of the economy; determining current student enrolment in

[8]*L-Orizzont* (The Horizon) is the GWU's newspaper, reflecting Labour Party views. Maltese quotations taken from this newspaper are freely translated by the researcher (Appendix 17).

higher educational institutions; examining faculty requirements" (Outline for Development Plan for Malta, 1973-1980).

The manpower required for favoured sectors was compared with the supply from higher education. However, this approach had its limitations, such as the cost of manpower training not being factored into the analysis. Moreover, future requirements might be underestimated due to technological or market developments that are difficult to predict. The manpower requirements approach was to translate future needs for business, Government and industry in terms of places in higher education. Both the economic strategy and the deficiencies in higher and vocational education induced a radical, contentious set of educational reforms.

2.4 Contentious educational reforms, 1974-1987

Under the Education Act 1974, an Advisory Council for Education and a Commission for the Development of Higher Education were constituted by law to advise the Minister and the Government on educational policy. Financial matters were determined by a Standing Committee.[9] The Commission for the Development of Higher Education was a permanent, "modernising tool… to maintain and improve standards in line with Commonwealth universities" (Mifsud Bonnici, 2013, p.139), chaired by Ralf Dahrendorf,[10] and was given great powers over tertiary education[11] and research.

The Commission recommended legislative changes aimed at integrating the University of Malta, the country's sole public funded university, more closely into the national educational framework. Dahrendorf proposed that the University should move into social sciences and revamp the law course; science teaching at higher levels should be concentrated at the University; training of University personnel; enlargement of part-time and extra-mural studies; research to be carried out with Government and private sector involvement to ensure relevance to the country's requirements, a perennial, elusive goal to the present. Industry,

[9]The Standing Committee had powers over the administration and finances of the University, MCAST and Malta College of Education (MCE).
[10]Sir Ralf Dahrendorf KBE, FBA (1929-2009) was a sociologist and leading expert on class divisions in modern society.
[11]The tertiary level institutions consisted of the University, MCAST and the MCE.

commerce and banking would be encouraged to contribute to management courses. Other recommendations included the need to develop some centres of excellence at the University of Malta, but post-graduate work and some undergraduate work would be undertaken abroad. Dahrendorf's (1973) view was that:

> "the University needed to be nudged gently into the modern world. Training for the professions had to be complemented by teaching and research in the natural and social sciences as well as the humanities" (The Royal University of Malta's Annual Report, 1973; Minerva, 1981, p.135).

During the nineteen eighties, tertiary education policy was in fact geared to meeting "the needs of the productive, developmental and commercial sectors of the country and the educational, health and public services" (Development Plan 1980-1985, pp.177-178). Acting on this philosophy, the government launched a radical reform of the University system in 1978. A White Paper entitled *Tertiary Education: Proposed Reforms* (June 1978) stated that the Government wanted the University of Malta to respond more closely to Malta's economic development.[12] Malta was too small to produce extensive and deep research by the University: the latter should produce good graduates and workers. Programmes of study which were not considered relevant to Malta's needs would be discontinued, among them theology, arts and science. Courses in the arts and science faculties could run only against payment of tuition fees. There was great resistance to these measures from the University of Malta; consequently, a second University was created as a transitional arrangement, utilising upgraded MCAST departments, until the two institutions were merged as the University of Malta in 1980.

The fields earmarked for higher education included medicine, pharmacy, dental surgery, architecture, engineering, law, accountancy, public administration, management and education. Some of these were new to Malta. The duration of degree programmes was generally five years, half of the year spent on studies and the other half in work under a new worker-student scheme.

[12]The educational reform coincided with the doctors' ten year protracted and acrimonious dispute between the medical profession and the education of students.

The governing Council included employer and worker representatives. The institution would no longer be:

> "an end in itself but as an essential means towards the realisation of national objectives… The academic achievements at the University have to be measured not only in terms of excellence but also in terms of relevance to the country's needs" (Parliamentary Debates, March 1980).

The reformed system was to:

> "Bring tertiary education within the reach of all those who desire it or deserve it and opportunity is given to all, no matter which walk of life they come from; make students independent of all systems of patronage by providing them with the opportunity of having a decent living during University years; bring professional classes closer to the working community and encourage a sense of equality, respect and appreciation between intellectuals and manual workers; will, so far as practical, provide the student with a gainful occupation in which his academic qualifications can be turned to account for the benefit of himself and of the community; and help students acquire a sense of wisdom and diligence, perception, ability and responsibility and recognition of their duties" (White paper, 12 June 1978, p.9; Minerva, 1981, p.149).

Enrolment in the reformed University was regulated by a 'worker-student scheme':

> "a system whereby a worker having the necessary qualifications to join one of the courses in accordance with the statutes and rules of the University is selected…for admission and alternates a period of work at his place of work with a period of study at the University" (Article 37.2 of the 1980 Act; Reform of Higher Education in Malta 1978; Minerva, 1981, p.149).

A government-appointed Board decided on student admissions, which were limited by a *'numerus clausus'* resulting from an assessment of the country's future needs. Admission depended on sponsorship by an employer. Worker-students contracted to work for the employer during and on successful completion of the course, for two years, failing which, they were liable to a financial penalty (Minerva, 1981, p.161). Table 1 records worker-student sponsorships from 1979 to 1985 (in Mayo, 2012).

Table 1: Employer sponsorships of worker students (1985)

Year	Sponsors		
	Government Departments	State Enterprises	Private Organisations
1979	302	37	117
1981	204	57	50
1983	238	64	41
1985	192	41	3
TOTAL	936	199	211

Source: Department of Education, 1985

The private sector was reluctant to sponsor worker-students "except for businessmen who sponsored their next of kin" (Mayo, 1986, p.15). In effect, the Government and state enterprises were compelled to sponsor the majority of students and offer them employment. Private enterprise preferred to recruit graduates directly: in fact, firms poached engineering graduates from Government and parastatal organisations (Professor D. Fenech, Dean of Arts, Rector's delegate in the 1980s).

In the final analysis, the system did not alter University curricula or encourage more students to enrol. On the contrary, the number of students in tertiary education decreased. The percentage of female students decreased, as sponsors preferred male graduates as a long-term investment. The student planning intake "ensured the availability of a job on successful completion of the university course" (Spiteri Campbell, 1984, p.25), but nothing more: it was geared towards 'employment' and not 'employability' as is the neo-liberal discourse in education today. The system also distorted other educational levels: for example,

secondary school pupils began sitting for more Ordinary level examinations to improve their chances of admission.

The worker-student policy rested on the assumption that the policymakers knew what was best. In resigning (June, 1978), the Chair of the Commission for Higher Education, Dahrendorf stated:

> "I am not unaware of the difficulties with which a small University in a small country is faced but the degree of direct Government intervention which has become customary in Malta and which is now made explicit in the Act is bound to destroy the last remnants of quality in Maltese higher education" (Austin, 1981, p.139).

The worker-student scheme "… produces either unhappy workers or underqualified students or both, and adds nothing to education or to social integration" (Dahrendorf, 1978, cited by D. Austin, 1981, p.124). Though the Government dismissed Dahrendorf's criticism, in 1985 the Minister for Education and the Higher Education Committee evaluated the scheme, which was based on a method of combining classroom-based education with practical work experience developed by the National Commission for Cooperative Education (USA). The evaluation found that the majority of work assignments were not relevant to the students' courses. Responsibility for monitoring learning through work should have been given to the University to ensure continuity and relevance. Moreover, the study phase was too short to provide proper assimilation and reflection (Department of Education, 1985; Mayo, 2013). Students viewed work as a step towards becoming financially independent; the idea of giving 'service' was not fostered. Research showed that "37% of university students claimed that they would not have entered University without the financial assistance provided through the worker-student scheme" (Schembri, 1982, p.109). The scheme allowed individuals in full-time employment (in the public sector) to be sponsored by their employer, retain their salary and read for a degree. Financial assistance was also introduced in the Government sixth form (the pupil worker scheme) and vocational education (ESTS, introduced in 1979). The reform aimed "to provide access, within a 'meritocratic' framework" (Mayo, 2013, p.16).

The reform of higher education fueled the political and industrial conflicts which characterised Malta between 1977 and 1987. It attracted trenchant criticism from the parliamentary Opposition and employers, as well as academics. The Malta Employers Association (MEA) expressed the business community's concerns comprehensively, raising ideas and issues which remain part of the discourse about higher education and employability to this day.

MEA considered the reforms contrary to the "need of broadness, flexibility and freedom" (MEA in *Sunday Times*, 16 April, 1978). In a memorandum to the Government (MEA, 1978), the Association argued that, whilst education should be linked to national economic planning objectives, it should not be tied rigidly and exclusively to industrial growth: rather, tertiary education should have a wide spectrum to avoid limiting labour mobility. The Association agreed to student scholarships, granted to the most deserving. Sponsorships, on the other hand, implied paternalism, generating a spirit of acquiescence rather than a dynamic and creative approach required of management. Relevant work experience linked to academic studies in certain areas was essential, for example, in finance and chemistry. On graduation, employers expected their sponsored graduates to undertake managerial roles. However, "the students in fact were not sufficiently experienced or psychologically mature enough for such responsibilities" (MEA, 1978, p.1). The Association advocated that local qualifications should be recognised by competent international bodies to assure prospective investors about the quality of local personnel. In fact, this is one of the benefits deriving from EU membership as will be explained in chapter 5.

The concept of making the University respond to labour market developments and human resource needs, linked with greater participation in University administration by industry, together with a new structure and courses of study, created significant challenges in relation to raising University standards and expansion. It raised a fundamental concern – the extent to which a Government should control all aspects of the University and students' lives. The reform affected academic freedom: it was political and ideological as well as an educational, cultural and social reform.

2.5 Liberalising higher education, 1988-2000

A change in administration in 1987 brought about considerable changes to tertiary education. A new Education Act 1988 laid down a different philosophy of education.

> "The 'state' and not the Minister of Education is the prime mover of the education system, which demonstrates greater democratization of national education... The Act states that decision making of education will be decentralised at all levels from Government responsibility to a shared task with a larger and wider Community. The Act refers to lifelong learning as a guiding theory of education in school curricula and non-formal education programmes" (Calleja, 1994, p.190).

These three concepts were linked to innovative, far-reaching decisions at tertiary education level. The first was the abolition of the worker-student scheme. The University was opened up to all qualified students without the need for them to find sponsors. The academic year expanded to eight months. The Faculties of Arts and Science were reinstated and the Commission for the Development of Higher Education was abolished. Liberalisation was guided by Fr Peter Serracino Inglott (26 April, 1936 – 16 March 2012), who was Rector of the University of Malta (1987–1988, 1991–1996) and Emeritus Professor of Philosophy; he became the arbiter, virtually unchallenged, of higher education policy and performance.

The only aspect of the 1978 educational reforms to be retained was financial support, which took the form of a maintenance grant (referred to as a stipend). This was variously regarded as an incentive scheme, a social benefit, an investment in 'human capital' and a contribution to financial independence. "The stipend was effectively transformed from payment for work to an instrument for motivating students to follow post-secondary and tertiary education" (Baldacchino, 1999a, p.6). From 1995, post-graduate students were no longer eligible for stipends. While no tuition fees are charged for full-time undergraduate courses, they are levied on part-time undergraduate and post-graduate courses.

In 1990, the Government commissioned a report on the University of Malta from the Warwick Higher Education Group (WHEG), led by Professor Michael

Shattock. The Group's review, christened the Shattock Report, expressed the idea that whilst a university consists of a "community of scholars and students engaged in the task of seeking the truth, it needs a strategic plan to justify its funding by the State through its contribution to the intellectual, social and economic life of the nation" (WHEG, 1990, p.1). The broader role of universities throughout Europe was being emphasised in economic and political terms; the University of Malta could not stand apart. The resulting strategic plan assessed the University's positioning in the country's economy and prospects, the adequacy of its mechanisms, funding, planning and management of set tasks, the effectiveness of decision making systems and its ability to maintain research credibility, while providing a good education for its students. The University needed a radical shift of attitude to play its part effectively and adapt to the world (WHEG, 1990, p.5). The Shattock Report guided higher education policy for the next decade. Some of its most important recommendations were progressively incorporated into the Education Act, 1988 (Cap. 327, Laws of Malta), which regulates the governance of the University of Malta, the re-constituted Malta College of Arts, Science and Technology (beginning 2001) and other educational institutions.

Since the start of the twenty-first century, as the Maltese economy and labour force are progressively incorporated into the European Single Market, and European policy increasingly determines domestic policy frameworks, higher education and economic strategy have become aligned in new ways. The Malta Education Strategy 2015-2024, which guides policies and programmes at present, sets the following objectives:

> "improve the quality and effectiveness of education, ensure a fairer, more inclusive and democratic educational system, increase the level of student achievement across all levels, and improve the transition from early childhood to primary, secondary, vocational and tertiary education" (MEDE, 2015, p.1).

It aims at establishing greater synergy between relevant national and global institutions, better coordinate actors and stakeholders involved in the educational sector as well as to involve social partners. This is discussed in chapter 5.

The priority areas for the higher education strategy, 2020 are:

> to increase "participation and attainment rates in higher education, reduce gender differences, encourage innovative content and programme design and increase in employability and entrepreneurship" (NCFHE, 2015-2024, p.21).

Is the present scenario in higher and further education consistent with these objectives? The following sections examine this question.

2.6 Contemporary higher education: philosophy and policy

When Malta joined the EU in 2004, the Union's HEIs aimed to become more international, by offering services within a border-free market. The Bologna and Copenhagen processes[13] were the impetus for the creation of a European Higher Education Area (EHEA) in 2010, leading to the European skills formation. This model is dependent on a strong bricolage of diverse characteristics that are derived from influential countries such as Germany and Britain. The latter have been major contributors of policy paradigms that have been adopted by the EU and in turn, applied by other member states, including Malta (Figure 9). There is no one single universal model that is the blue print of skill formation reform, but "most systems have employability and lifelong learning in common" (Powell et al., 2012a p.255).

The European model focuses on "employable, flexible and mobile individuals who are responsible for achieving and making the transition from the educational arena into the labour market.

The objectives of the Bologna Declaration were to:

> "adopt a system of easily readable and comparable degrees; adopting a system of two main cycles (undergraduate/graduate), establish a

[13]The Bologna process (1998 to date) includes individual cross-border mobility, "quality assurance, the transparency and recognition of qualifications obtained from other countries, the recognition of the duration and degree of study courses" (Powell et al., 2012a, p.241). The Copenhagen process (2002 to date) includes "a framework of qualifications and competencies, a system of VET credit transfer, common quality criteria and improvements in citizens' access to education and training" (Powell et al., 2012b, p.412).

> system of credits (ECTS), promote mobility by overcoming obstacles, promote European cooperation in quality assurance, and promote a European dimension in higher education" (Bologna Declaration, 1999, p.3).

The Bologna process influenced Maltese further and higher education in terms of degree structure, qualifications frameworks, recognition of degrees and quality assurance. Malta first defined its national qualification framework (NQF) in 2010 to provide learners with a clear map of available levels of qualifications, entry and exit points at every level, and levels of qualifications by sector and occupation. Table 2 illustrates the MQF which classifies full qualifications obtained from full-time and part-time accredited programmes of study from Levels 1 to 8 (Appendix 17).

Table 2: Referencing of the Malta Qualifications Framework (MQF) to ISCED 2011

Malta Qualifications Framework			ISCED[14] 2011
8	Doctoral Degree		ISCED 8 Doctoral Degree/PhD
7	Master's Degree/ Postgraduate Diploma/Postgraduate Certificate		ISCED 7 Master's degree or equivalent
6	Bachelor's Degree		ISCED 6 Bachelor's Degree or equivalent
5	Undergraduate Diploma Undergraduate certificate Higher Education Certificate	Foundation Degree VET Higher Diploma	ISCED 5 Short-cycle tertiary education
4	Matriculation Certificate Advanced Level Intermediate Level	VET Diploma	ISCED 4 Post-secondary education
3	General Education Level 3 SEC Grade 1-5	VET Level 3	ISCED 3 Upper-secondary education
2	General Education Level 2 SEC Grade 6-7 Secondary Education School Certificate and Profile (B)	VET Level 2	
1	General Education Level 1 Secondary Education School Certificate and Profile (A)	VET Level 1	ISCED 2 Lower secondary education ISCED 1 Primary education ISCED 02 Pre-primary education (3 years) ISCED 01 Pre-primary education (0-2 years)

Source: Further and Higher Education Statistics 2013/2014, p.21

The MQF is based on three cycles in higher education, which are "compatible with the three-cycle system of bachelor, master and doctorate degrees adopted as a common degree structure within the European Higher Education Area" (Further and Higher Education statistics, 2013-2014, p.21). Each level builds on the preceding one; each qualification gives access to higher levels that "prepare the student for the labour market and for further competence building" (BFUGB (8) 5 2005, p.1).

[14]ISCO organises *'education'* in fields. ISCED refers to fields of education, while higher education generally refers to fields of study.

The ECTS is used to compare qualifications easily as well as to accumulate and transfer credits. It validates all learning; harmonisation of credits has led to a standard grading system. The agencies and authorities that evaluate and award credentials or licenses are coordinated by MQRIC (Appendix 17). The procedures for recognition of academic and professional qualifications apply to all nationalities.

2.7 Higher Education: The University

The University of Malta is the highest teaching institution, operating at post-secondary and tertiary levels as an autonomous institution with a mission to conduct teaching and corporate research and to participate actively in the country's socio-economic development. Among its strategic goals, it prepares students for the world of work. It is publicly funded and is open to all those who satisfy entry requirements.

The University is obliged to provide measures of knowledge and human development, which seek to manage the perennial tension between the liberal and functional perspectives to education. It has invested in courses, specialisations, areas of study and research initiatives designed to produce qualified professionals working in public and private organisations. It is geared towards providing expertise in fields that are crucial to Malta's infrastructural and industrial development. However, the University faces challenges posed by growing pressure on admissions, pressure to provide equal opportunities for men, women and persons having special needs, limited finances, increased competition for state resources and demands for greater accountability.

In 2015, there were some 11,500 students including over 1000 international students (UoM statistics, 2015), following full-time or part-time courses on a modular or credit system, extending from certificate to doctoral degrees. These are run by fourteen faculties as well as numerous institutes and two Schools. Most Maltese (and Gozitan) graduates obtained their tertiary education qualification from the University of Malta and its Gozo Campus (Appendix 17) but it does not enjoy a monopoly in tertiary education. Increasing numbers of Maltese obtain tertiary-level qualifications outside the University, attending foreign universities or local branches or franchises of foreign educational

institutions, as well as distance-learning courses. Whilst private institutions are not publicly funded, students attending them are eligible for centrally-funded scholarships and grants; therefore, it can be argued that their operations are supported indirectly by public funds.

2.8 Further Education

> "Academic further education is mostly provided by three state post-secondary institutions and five private institutions together with other public and private tuition and training centres also offering academic full-time, part-time or short courses in Further Education" (NCHE, 2011, p.14).

Vocational education did not receive the same scale of investment as general and academic higher education during the 1980s and 1990s. A national vocational education and training (VET) policy was created to enhance vocationally oriented further and higher education. Two state-run institutions provide vocational further education, namely MCAST, which was reopened in 2001 and ITS. MCAST consists of three colleges: Foundation, Technical and University Colleges.

> "This corporate structure enables each College to create focused strategies that address the specific needs of students at each level while maintaining a healthy dialogue with all interested stakeholders in order to provide the best programmes for the needs of the local economy and society" (MCAST, 2014).

It offers 170 full-time courses and 300 part-time courses and has 6,676 students (MCAST, 2015), an increase of nearly 3% from 2014. Students can advance through different levels of qualifications, from introductory and foundation levels to technical and, beyond that, to first-degree level. MCAST's ten Institutes address labour market needs by shaping skills development according to sectoral characteristics.

VET became a European priority through the Copenhagen process, launched in 2009, having emerged from the Lisbon Agenda.

> "Its main aim is to promote mutual trust, transparency and recognition of competences and qualifications to increase mobility and to facilitate access to lifelong learning. Four priorities for enhanced European cooperation in VET across Europe were identified namely strengthening the European dimension; improving transparency, information and guidance systems; recognising competences and qualifications and promoting quality assurance" (Helsinki VET meeting, 2006, p.1).

Vocational education has a dual objective – contributing to employability and economic growth, and responding to broader challenges, such as promoting social cohesion.

2.9 Further and higher education statistics 2014

Having outlined the institutional framework of further and higher education in Malta, what can be said about its performance? This section reviews statistics on student participation in further and higher education for the academic year 2013-2014. It explores trends in student participation by sector, student demographics further and higher education attainment.

Table 3 records the student population in further and higher education in Malta between 1995 and 2014 (NCFHE, Survey, 2014). It covers full/part time programmes in state and independent further and higher education service providers.

Table 3: Total student population following further and higher education in Malta

	Further (Academic)	Further (Vocational)	Higher	Other*	Short courses	Total (excl. other and short courses)	
1995	3,872	1,362	5,805			**11,039**	
1996	3,250	1,423	6,263			10,936	
1997	4,438	1,621	6,368			12,427	
1998	5,185	1,841	7,146			14,172	
1999	5,033	1,917	6,959			13,909	
2000	5,191	2,615	6,362			14,168	
2001	5,122	2,801	7,493			15,416	
2002	4,970	3,638	7,332			15,940	
2003	5,169	3,858	9,006			18,033	
2004	5,339	4,473	9,245			19,057	
2005	5,732	4,386	9,530			19,648	
2006	6,117	4,620	9,450			20,147	
2007	6,119	4,930	9,500			20,549	
2008	5,711	6,163	9,747			21,621	
2009	6,457	6,661	10,177			23,295	
2010	6,531	7,773	10,737			25,041	
2011	6,734	9,321	11,714			27,769	
2012	6,609	6,454	14,718			27,781	
2013	6,756	6,810	16,678			30,244	
2014	8,189	7,167	15,038	2,235	16,739	**30,394**	**49,368**

Source: 1994-2005 NSO Education Statistics; 2006-2007 NCHE provisional data; 2008-2014 NCFHE Further and Higher Education Statistics Survey 2008-2014. 'Other' refers to programmes by non-licensed education providers or not accredited by the NCFHE.

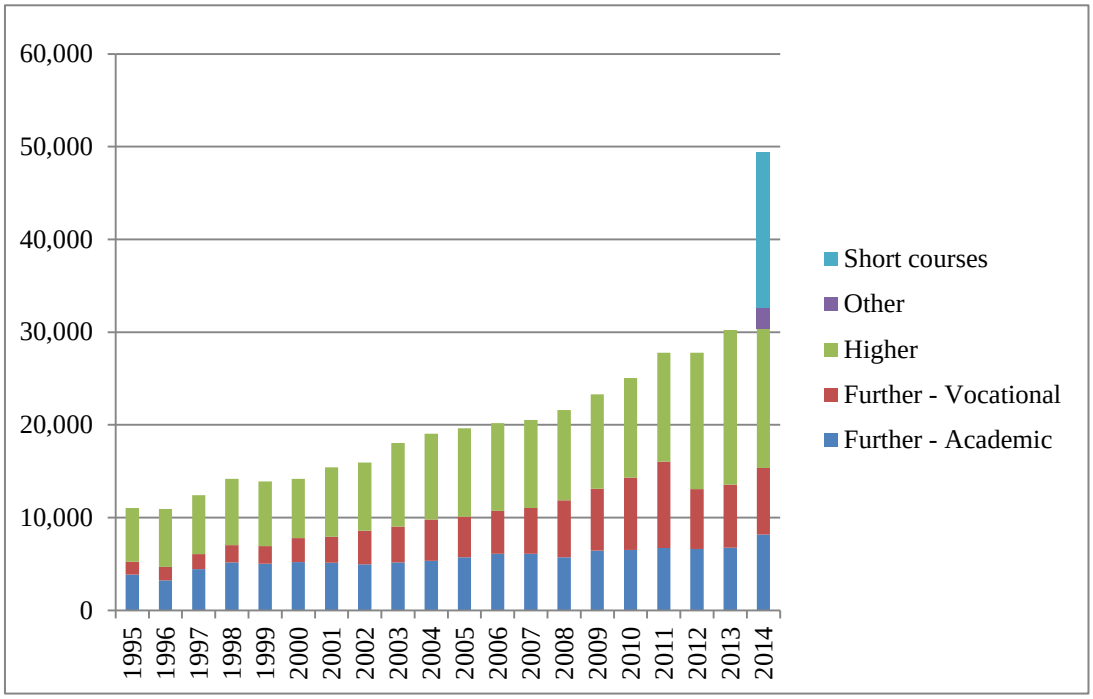
Student participation in further and higher education rose significantly from about 11,039 in 1995 to 30,394 in 2014 (NCFHE statistics 2013/14 p. 25). The total student population following further and higher education (full and part-time courses) in Malta in 2014 was 49,368. The figure would increase to nearly 50,000, if the number of students attending other[15] or short courses[16] were included. 31% were registered in MQF 1-4 level programmes. 30% were

[15] *'Other'* refer to courses that meet the exceptions and exclusions from licensing and accreditation by the NCFHE and have not been specifically reported as short courses in line with subsidiary legislation 327.433 Article 6.1a. Subsidiary Legislation 327.433 Further and Higher Education (Licensing Accreditation and Quality Assurance Articles 6.1(a-d).

[16] A short course meets the conditions for exception and exclusion from licensing and accreditation by the NCFHE. A short course does not lead to a full qualification.

registered on MQF levels 5-8 higher level programmes. 39% were registered for short and other courses at 34% and 5%, respectively.

Figure 1: Total student population following further and higher education in Malta 1995-2014



Source: 1994-2005 NSO Education Statistics; 2006-2007 NCHE provisional data; 2008-2014; NCFHE Further and Higher Education Statistics Survey 2008-2014. 'Other' refers to programmes by non-licensed education providers or not accredited locally by the NCFHE

According to Figure 1, student enrolment in further academic education has remained consistent. Further vocational education has increased exponentially, which can be attributed to MCAST's presence since 2000. In 2014, 47% of further education students were enrolled on vocational programmes and 53% were enrolled on academic programmes of study. There was a 5% increase from 2013 to 2014 in vocational student enrolment and a 21% increase of students in further academic programmes of study. Student participation in higher education declined by 10% in 2014 when compared to 2013, perhaps because there was a methodological change in the reporting of data.[17] Table 4 and figure 2 show the share of student population in higher education by public or private sector from 2008 to 2014.

[17]The data were cross-checked against a register of licensed education providers and their accredited programmes. NCFHE statistics 2013/14, Ministry for Education and Employment, pp.16-17.

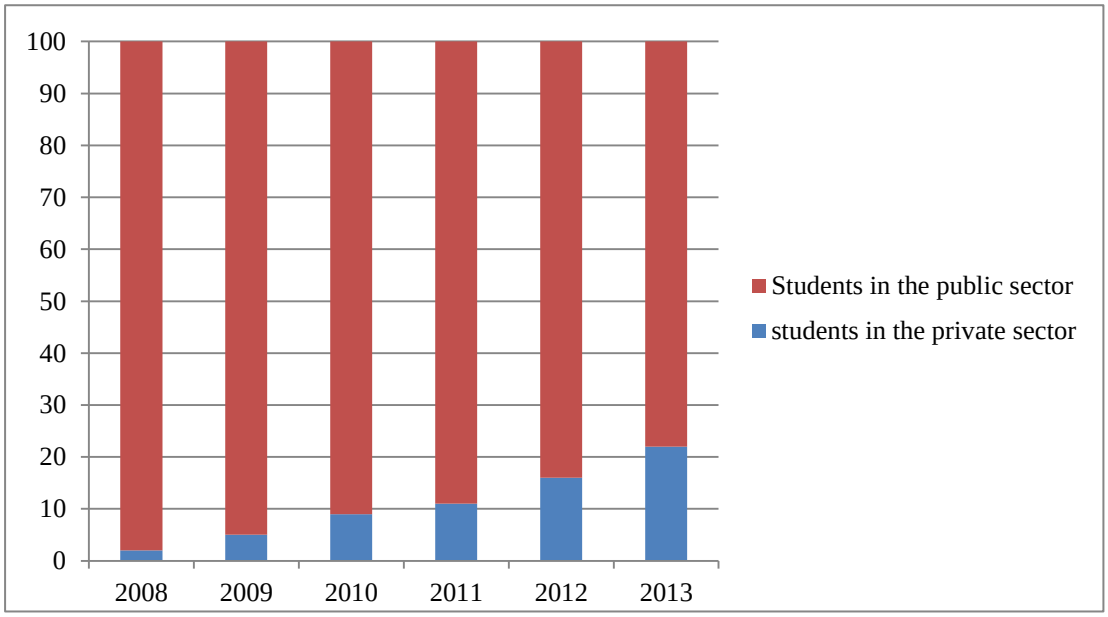
Table 4: Share of student population in higher education by public and private sector from 2008-2014

	2008	2009	2010	2011	2012	2013	2014
%students in the private sector	2%	5%	9%	11%	16%	22%	17%
%students in the public sector	98%	95%	91%	89%	84%	78%	83%

Source: NCFHE Further and Higher Education Statistics Survey 2014

83% of the students were enrolled with state-funded institutions in Malta in 2014. The percentage of students enrolled on courses provided by the private sector has steadily increased from 2% in 1995 to 17% in 2014, perhaps because all providers offering further and higher education in or from Malta require a licence to operate.

Figure 2: Share of student population in higher education by public and private sector from 2008-2014



Source: NCFHE statistics 2013/14 p.27

The rising percentage of students attending private institutions could be explained by the introduction of the Further and Higher Education *(Licensing, Accreditation and Quality Assurance)* Regulations 2012.

Table 5: Student population in higher education by public and private sector from 2008-2014

	2008	2009	2010	2011	2012	2013	2014
Students – public sector	9,508	9,616	9,809	10,405	12,403	12,981	12,440
Students – private sector	239	540	928	1,309	2,315	3,697	2,598
Total student population	9,747	10,156	10,737	11,714	14,718	16,678	15,038
Annual change in the total student population		4%	10%	20%	51%	71%	54%

Source: NCFHE Further and Higher Education Statistics Survey 2014

Table 5 shows that private provision in higher education has gained market share and that the annual change in student population has increased to 54% in six years. This could be due to the Government funding scheme[18] for training courses.[19]

Table 6: Total student population by public and private sector 2014

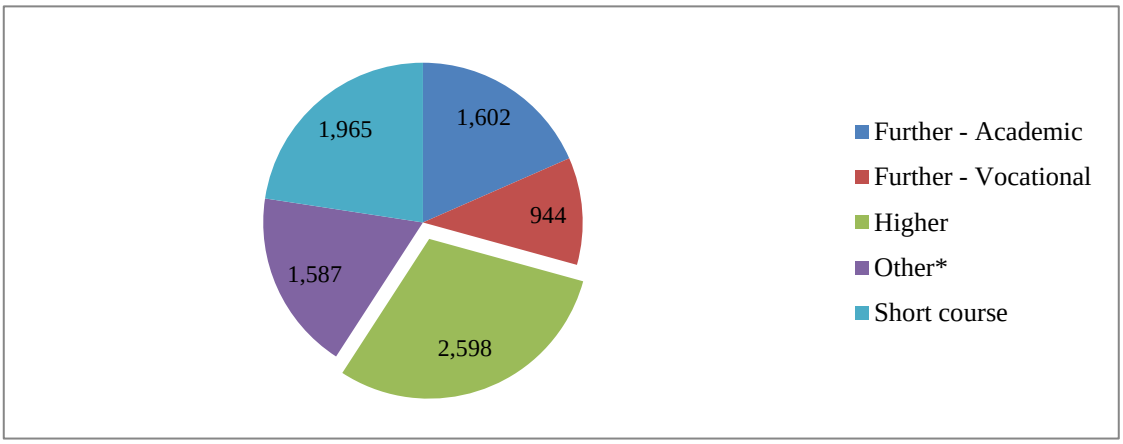
	Private	Public	Total student Population
Further (academic)	1,602	6,587	8,189
Further (vocational)	944	6,223	7,167
Higher	2,598	12,440	15,038
Other*	1,587	648	2,235
Short course	1,965	14,774	16,739
Total	8,696	40,672	49,368

**'Other' refers to programmes by non-licensed education providers or not accredited by the NCFHE*
Source: NCFHE Further and Higher Education Statistics Survey 2014

Table 6 shows the student population in 2014 and the distribution by type of education provider. Of the total student population, 30% were enrolled in higher education offered by the private sector, whilst 31% were in the public sector.

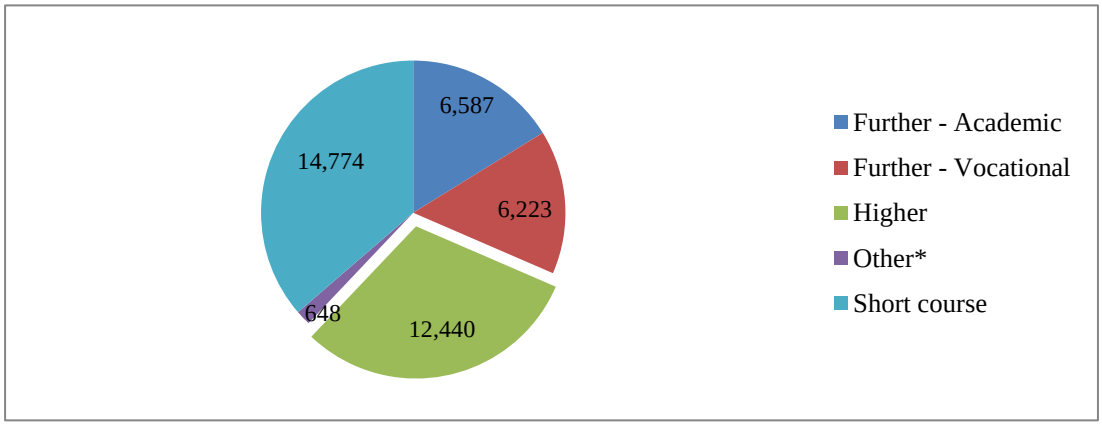
[18]Malta Enterprise launched a *Get Qualified* scheme in 2011 (revised in 2014) where students undertaking designated courses qualify for tax credits. Available from: http://www.maltaenterprise.com/support/get-qualified-2014-2020 Accessed 10/10/2016].
[19]Lists of designated programmes are available from: https://getqualified.maltaenterprise.com/applicablecourses [Accessed 27/02/2016].

Figure 3: Total student population by the private sector 2014



Source: NCFHE Statistics 2013/14, p.31

Figure 4: Total student population by the public sector 2014



Source: NCFHE Statistics 2013/14, p.3.

Figures 3 and 4 show that more students attend further and higher academic courses offered by the public rather than the private sector. This may be because public sector institutions offer free [primary up to] tertiary education and students attending private higher education institutions do not receive a monthly maintenance grant. Also, state higher education institutions offer numerous courses that the private sector does not, such as science degrees.

2.10 Higher Education: Enrolment and Attainment

Higher education enrolment

The number of graduates has increased annually and does not seem to be levelling off (University of Malta statistics, 2014). Nonetheless, some recent policies have indirectly impacted course enrolment. For example, in 2012, entry requirements

for the B.Sc. (honours) Pharmaceutical Science were changed, consequently leading to a decrease in enrolment. Table 7 shows the share of males and females in higher education for the years 2008-2014.

Table 7: Share of males and females in higher education for the years 2008-2014

	2008	2009	2010	2011	2012	2013	2014
% females	54%	56%	57%	57%	55%	55%	54%
% males	46%	44%	43%	43%	45%	45%	46%

Source: NCFHE Further and Higher Education Statistics Survey 2014

In 2014, female enrolment (54%) outnumbered male enrolment (46%) on full-time and part-time higher education programmes. In the education field of study, 79% of students are female (the widest gender gap), followed by health and welfare at 67%. Science and engineering are the most attractive courses to males, who account for 75% of this cohort (NCFHE, 2014, p.37).

Table 8: Student population in higher education by field of study 2008-2014

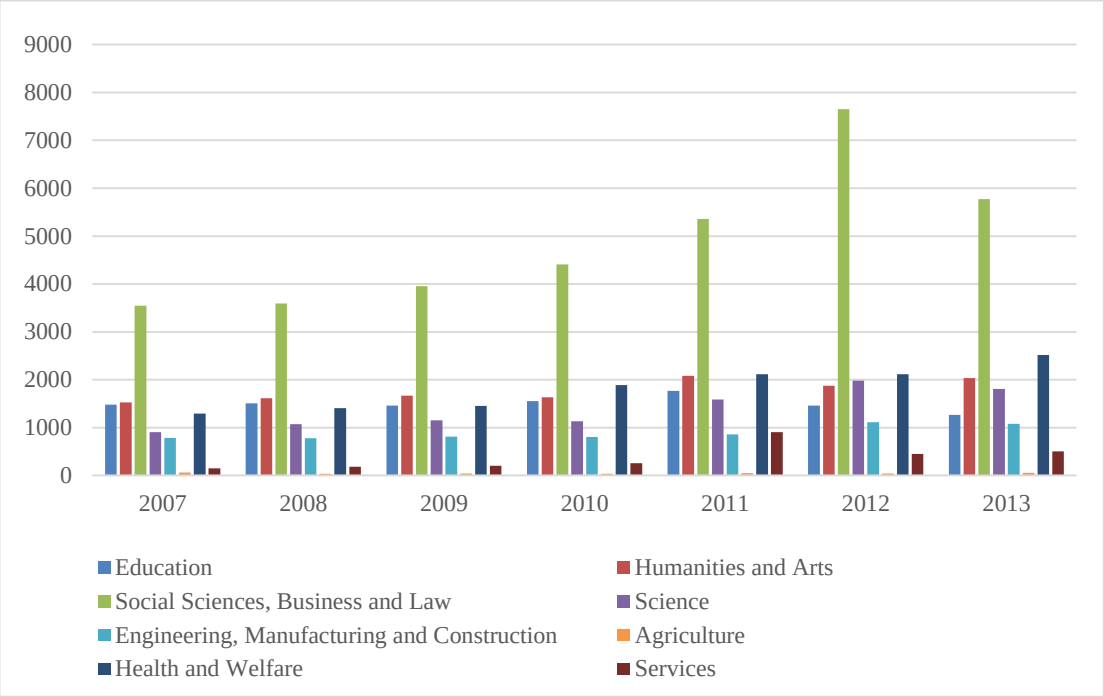
ISCED Fields of study[20]	2007	2008	2009	2010	2011	2012	2013
Education	1,482	1,507	1,460	1,556	1,766	1,457	1,264
Humanities and arts	1,530	1,611	1,664	1,637	2,083	1,876	2,037
Social sciences, business and law	3,543	3,591	3,953	4,408	5,359	7,648	5,774
Science (life sciences, physical science, maths and statistics, computing)	903	1,072	1,151	1,130	1,585	1,980	1,807
Engineering, manufacturing and construction	786	777	813	805	858	1,110	1,078
Agriculture	61	34	40	33	46	45	53
Health and welfare	1,290	1,405	1,454	1,888	2,113	2,112	2,519
Services (life sciences, maths, statistics, computing)	152	180	202	257	908	450	506
TOTAL	9,747	10,177	10,737	11,714	14,718	16,678	15,038

Source: NCFHE Further and Higher Education Statistics Survey, 2014

[20]There are 25 fields of study organised into broad groups. Each group's number code is used by UNESCO, OECD, the EU's Eurostat and the EU's national statistical agencies.

Table 8 shows the student population in higher education by field of study 2008-2014.

Figure 5: Student population in higher education by field of study 2008-2014



Source: NCFHE Statistics 2013/14 p.38

Figure 5 shows that the highest participation rates are in social science, business and law. Health and welfare is the second most common field of study, followed by humanities and arts (Moodie, 2014).

Moreover, the number of mature applicants at the University of Malta is on the increase, perhaps because the population is aging and employment opportunities for older individuals are increasing. Persons aged over fifty years tend to enrol for university degrees out of interest, while younger persons do so to enhance their career prospects.

Higher education attainment

Educational attainment policy is important as it is associated with innovation and economic growth. In 2013, 26% of the population in Malta aged between 30-34 years were reported to have completed higher education successfully.

Table 9: Tertiary educational attainment (ISCED 2011 levels 5-8) of 30-34 year olds in the EU28

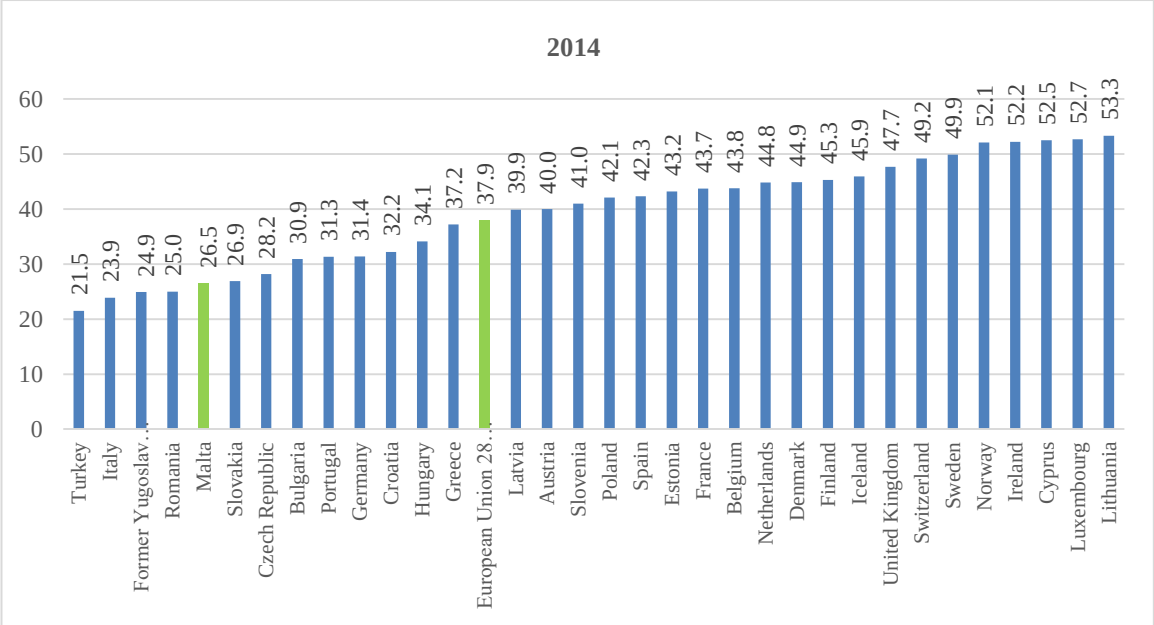
	2008	2009	2010	2011	2012	2013	2014[21]
Belgium	42.9[b]	42.0	44.4	42.6	43.9	42.7	43.8[b]
Bulgaria	27.1	27.9	27.7[b]	27.3	26.9	29.4	30.9[b]
Czech Republic	15.4	17.5	20.4	23.7[b]	25.6	26.7	28.2[b]
Denmark	39.2	40.7	41.2	41.2	43.0	43.4	44.9[b]
Germany	27.7	29.4	29.8	30.6[b]	31.8	32.9	31.4[b]
Estonia	34.4	36.3	40.2	40.2	39.5	42.5	43.2[b]
Ireland	46.3	48.9[b]	50.1	49.7	51.1	52.6	52.2[b]
Greece	25.7	26.6[b]	28.6	29.1	31.2	34.9	37.2[b]
Spain	41.3	40.7	42.0	41.9	41.5	42.3	42.3[b]
France	41.0	43.0	43.2	43.1	43.3	44.0[b]	43.7[b]
Croatia	18.5	21.3	24.5[b]	23.9	23.1	25.6	32.2[b]
Italy	19.2	19.0	19.9	20.4	21.9	22.5	23.9[b]
Cyprus	47.1	45.0[b]	45.3	46.2	49.9	47.8	52.5[b]
Latvia	26.3	30.5	32.6	35.9	37.2	40.7	39.9[b]
Lithuania	39.9	40.4	43.8	45.7	48.6	51.3	53.3[b]
Luxembourg	39.8	46.6[b]	46.1	48.2	49.6	52.5	52.7[b]
Hungary	30.9	31.6	34.8	37.9	39.2	40.1	41.0[b]
Malta	21.0	21.9	22.1	23.4[b]	24.9	26.0	26.5[b]
Netherlands	40.2	40.5	41.4[b]	41.2[b]	42.2	43.2[b]	44.8[b]
Austria	21.9	23.4	23.4	23.6	26.1	27.1	40.0[b]
Poland	29.7	32.8	34.8[b]	36.5	39.1	40.5	42.1[b]
Portugal	21.6	21.3	24.0	26.7[b]	27.8	30.0	31.3[b]
Romania	16.0	16.8	18.3[b]	20.3	21.7	22.9	25.0[b]
Slovenia	30.9	31.6	34.8	37.9	39.2	40.1	41.0[b]
Slovakia	15.8	17.6	22.1	23.2[b]	23.7	26.9	26.9[b]
Finland	45.7	45.9	45.7	46.0	45.8	45.1	45.3[b]
Sweden	42.0	43.9	45.3	46.8	47.9	48.3	49.9[b]
United Kingdom	39.5b	41.4	43.1[b]	45.5[b]	46.9	47.4	47.7[b]
Iceland	38.3	41.7	40.9	44.6	42.8	43.9	45.9[b]
Norway	46.2	47.0	47.3	48.8	47.6	48.8	52.1[b]
Switzerland	41.3	43.4	44.2	43.8	43.8	46.1	49.2[b]
Former Yugoslav Republic of Macedonia	12.4	14.3	17.1	20.4	21.7	23.1	24.9[b]
Turkey	13.0	14.7	15.5	16.3	18.0	19.5	21.5[b]

Source: Eurostat statistics 2014

Malta still lags behind the EU-28 average of 37.9% (Table 9). The Europe 2020 target is 40%, which means that Malta registers among the lowest rates of higher education attainment.

[21]b= break in time series. The indicator is defined as the percentage of the population aged 30-34, who have successfully completed tertiary studies (e.g. university, higher technical institution, etc.). Educational attainment is coded according to the International Standard Classification of Education (ISCED). ISCED 2011 level 5-8 has been applied to data since 2014 (ISCED 1997 level 5-6 for data up to 2013).

Figure 6: Share of 30-34 year olds having attained higher education (ISCED 2011 level 5-8) in the EU-28 in 2014



Source: Eurostat statistics, 2015

The expansion of tertiary education has contributed to upward mobility, at least in terms of educational attainment (Figure 6). However, such expansion has also brought about credential inflation, which diminishes the market currency of undergraduate degrees. Participation rates in diverse fields of study and at different levels define the potential of Malta's future workforce. Scarcity, skills gaps and mismatches have emerged due to a lack of jobs in certain sectors or persons seeking employment in specific occupations as well as those pursuing important areas of specialisation, an issue discussed in chapter 5.

2.11 The Economic and Labour Market Perspective

The labour market has not been able to respond in kind at a fast pace to "changes in technology, financial markets and product globalization" (Heckman, 2002, cited by Leuze, 2010, p.24). As a result, in many countries, including Malta, the labour market has been deregulated, thereby creating uncertainty. This occurs when laws are not fully aligned with the non-standard forms of employment. "Neo-liberal economic policy argues that prosperity in a turbulent global economy arises due to the economic responsiveness via the flexibility and

adaptability of institutions, including the labour market" (Purcell et al., 1999, p.17).

There has been a shift from manufacturing to service oriented companies in most EU countries, including Malta. Service employment is often associated with precarious employment positions, yet it also tends to create new opportunities for university graduates (Leuze, 2010). Workforce skills act as a buffer against changes in the labour market. These changes are driven by the demand that there are employability skills available. Empirical research has elicited "that the broad requirement for job skills rose significantly along with increasing job complexity and the requirement for employees to continually develop new and update existing skills" (Felstead et al. 2007, p.30). A smooth transition from the academic world into the labour market is demonstrated in a country such as Germany where graduates attend an apprenticeship programme unlike in the UK, for example, where there is a less structured approach. The transition from HEIs to employment in Malta varies depending on the discipline. This is further elaborated in chapter 5.

2.12 Conclusion

The foregoing review of the link between economic strategy and education policy over half a century demonstrates its effects on the animating philosophy and organisation of higher education, extending to such matters as student admissions and curricula. In the course of Malta's two economic transitions, higher education was itself transformed. A niche once occupied by a single, small institution catering for the country's elite and the learned professions grew into a substantial, competitive sector extending into most areas of contemporary scholarship. Two large, state-funded institutions – the University and MCAST – still dominate over the sector, but face growing competition from private institutions and foreign providers. Another transition occurred in parallel with the massification and liberalisation of further and higher education, namely, the Europeanisation of Maltese policy: where once, the UK's Inter-University Council was the reference point for the University of Malta, it is now the Bologna and Copenhagen processes which mould academic policy and practice.

Nevertheless, some important threads of continuity appear alongside these sweeping changes. They include the prominence of ideology in determining policy choices; arguments about the constraints imposed by the small size of Malta and its institutions; and the policy makers' utilitarian perception of higher education. Employment is the over-riding utilitarian preoccupation. For Maltese policy makers, learning and education must primarily have "a utilitarian and cultural aim…" (Sultana, 1995, p.202). Improving the skills and qualifications of the Maltese workforce requires both a flexible and responsive education system and an increased level of training investment by employers. This ensures their relevance to the requisites of the future job market. Knowledge graduates emerge as crucial players in economic performance and well-being; they help to create a global information economy. In the course of the transitions described here, concerns about graduate employment gradually shifted towards employability. Accordingly, the next chapter reviews the literature on the concept of employability and presents the thesis' conceptual framework of a National Skills Formation System.

Chapter 3: Discourses of Graduate Employability Skills

"Employability is not just about securing a job."
(Harvey and Locke, 2002, p.21).

3.1 Introduction

Many scholars have attempted to define employability, but there is no universal consensus on the term. "It should be noted that employability is a slippery and politicised notion and there are many approaches to defining employability" (Wilton, 2011, p.85; Green et al., 2013, p.11).

The aim of this chapter is to explain the concepts of employability and adopt a working definition of employability skills. It reviews the different conceptualisations of employability as a set of individual skills and attributes, as a discourse and product of institutional interaction. It also discusses employability frameworks and provides the thesis' conceptual model of a national skills formation system.

3.2 Employability as a set of individual skills and attributes

There have been various concepts attributed to employability. In the 20th century, there was 'dichotomous employability', whereby people were distinguished as being 'employable' or 'unemployable'. In the 1950s, the socio-medical employability perspective held that "employment's work requirements did not cater for the existing work abilities of socially, physically or mentally disadvantaged people" (McQuaid et al., 2005, p.197). The concept of manpower planning emerged in the 1960s, expanding the socio-medical employability stance by considering the abilities of disadvantaged groups regarding the work requirements for employment. All these concepts of employability were oriented towards the supply of disadvantaged people and what was required to be employable. This was followed by a shift in demand for labour, a concept known as flow employability, which focused on whether a person looking for work could find a job or not. In the 1970s, labour market performance employability focused on labour market outcomes achieved by programmes to address employability. In the 1980s, initiative employability emerged from the human resource development

literature, which highlighted the need for individuals to develop transferable skills, so that they had the flexibility to move between job roles and employers and in turn, remain employable.

The emphasis has been on the individual. Despite acknowledging the role of employers in the labour market, they were seen as having less responsibility than the individual. The policy focus of 'initiative' employability is on promoting lifelong learning, labour market flexibility and the provision of labour market information. It is on the "way individual attributes, personal circumstances, labour market conditions and other contextual factors interact with each other" (Green et al., 2013, p.11).

Many scholars have attempted to define the meaning of employability in terms of individual skills. Some examples include the following:

"Employability depends on the knowledge, skills and aptitudes they possess, the way they use those assets and present them to employers and the context within which they seek work" (Hillage and Pollard, 1998, p.1).

"Employability of a graduate as the propensity of the graduate to exhibit attributes that employers anticipate will be necessary for the future effective functioning of their organization" (Harvey, 1999, p.4).

"Employability, at an individual level, is a set of achievements - skills, understandings and personal attributes - that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy" (Yorke, 2003b p.477; Moreau and Leathwood, 2006, p.308).

These definitions emphasise the importance and relevance of employability skills. For students to find employment after graduation, they need to have acquired a set of attributes that complement the technical knowledge in their chosen degree. Such attributes include the skills, attitudes and abilities to implement the job. The Leitch Review of Skills (2006, p.6) on '*Skills*' defines them as "the capabilities and expertise in a particular occupation or activity…[and] classifies skills as a mixture between basic and specific skills."

To understand the skills, graduates are expected to acquire, a range of descriptors have been identified. Whilst such terms as attributes, qualities and understandings refer to the capabilities of an individual, they are not the same as skills. The term *'skill'* has a broader definition than these aspects in the literature. Since there is the need to differentiate between the technical and the generic (non-technical) skills related to employment, the following definition has been adopted in this thesis. Employability skills are defined as "skills required not only to be employed but to advance within an organisation and successfully contribute to its strategy" (ACER, 2002, p.6). This reflects organisational practice today and serves as a guide to a better understanding of the effect of institutional actors on the modes of provision of graduate employability skills and the skills policies that have been introduced in Malta (chapter 5).

3.3 Employability as a discourse and as a product of institutional interaction

Countries have different path dependencies for qualifications and skills and therefore, "the study of skill development and formation must take into account a nation's history, culture and politics as well as its economic trajectory" (Brown et al., 2001, p.30). For, "different economic, social and political outcomes are a cause of diverse production regimes" (Culpepper and Thelen, 2008, cited by Hall and Soskice, p.21).

Varieties of capitalism (VoC) approach[22] claims that firms' strategies are based on the national skills formation institutions set up to address particular issues such as industrial relations, vocational training and education, corporate governance, inter-firm relations and the coordination issues related to their own employees.

European countries have set up specific national economic institutions to address these issues and provide different solutions (Lauder et al., 2008). Hall and Soskice (2001) (cited by Lauder et al., 2008, p.20) suggest that "nations with a particular type of coordination in one sphere should tend to develop complementary practices in other spheres as well." This is known as institutional

[22]The varieties of capitalism approach claim that the "focus should be on the types of skills (as opposed to the level of skills) and the institutions i.e. the skills formation systems that facilitate the production and the economic utilisations of skills" (cited by Martinaitis, 2010, p.47).

complementarities. The long term relationships between banks, employees and other enterprises in coordinated economies provide institutional support for the development of specific skills. These are usually of value to an organisation or industry. In liberal market economies, organisations rely on coordinating mechanisms of the markets to engage in radical innovation. Generic or non-technical (as opposed to specific) skills emerge, which are easily transferable across different sectors of the economy. However, "if the conditions for path dependency change, changes in institutions and interests will occur" (Lauder et al., 2008, p.24). This implies that "skills development and their availability is determined and revealed in the skills formation institutions both historically and at this present time" (Warhurst and Findlay, 2012, p.27).

To understand how "skill formation, the labour market and welfare state" (Lauder et al., 2008, p.21) are associated, unique skill sets are considered across national economies. These are known as regimes of welfare production. In Estevez-Abe et al.'s (2001) theory, it is contended that there are three types of skill: i) firm specific skills ii) industry specific skills iii) general skills' (Lauder et al., 2008). Once qualified and employed with the company, employees are rigorously trained on high-quality market products in manufacturing companies. Acquisition of such *firm specific skills* means that their 'worth' in the market will be much less than industry skills owing to their lack of transferability.

Industry-specific skills refer to skills that are cutting-edge and "have currency across an industry" (Lauder et al. 2008, p.18). Standardised industry training is applicable to many recruits and employers will not poach as most employees will be as skilled as each other. Industry salaries will not vary, irrespective of job position, reducing the incentive to *'job hop'*.

Companies will seek to pay the lowest price for *general skills* needed for the mass production of goods and services. This type of labour market that best fits this strategy is one which is numerically flexible. Employees with little employment protection need to develop their general skills.

Many countries are focusing on raising the education levels for all. Education and the ability to acquire skills and knowledge are increasingly important, especially given the "increasing insecurity in the global economy" (Gordon, 2013, p.47). "In order to understand which rules and norms relate to graduates entering the labour market, it is important to analyse the historical evolution of the institutions of skills formation" (Leuze, 2010, p.38). Skill formation institutions influence graduates and employers' view of what the value of degrees are and what constitutes suitable employment. Moreover, the relationship between "higher education institutions and the labour market would affect graduates and employers' decisions" (Leuze, 2010, p.40). Diverse institutional arrangements and different development paths of collective training systems imply that "employers, the state and the unions demonstrated their interests in these training systems over time" (Busemeyer and Trampusch, 2011, p.7). This is known as the historical-institutionalist theory. Some institutions have their training systems deeply embedded due to the network of political and socioeconomic institutions. "This shows that these institutions are the determinants of firm strategies in skill formation. They are deeply rooted in politics and society…" (Busemeyer and Trampusch, 2011, p.7).

The development of models that link vocational education and training (VET) to institutions can be applied to the higher education field and the employment of graduates. Regarding which, under the VoC perspective, it is argued that institutions reinforce each other and form ideal types of coordinated or liberal market economies. There are two types of institutional contexts creating specific transition patterns. These are the coordinated market economy, such as Germany in which young people attend a standardised apprentice system which facilitates entry into the labour market and "a liberal market economy, such as Britain [where] the transition process from higher education institutions to the labour market system is less structured, resulting in [greater] risks of unemployment" (Leuze, 2010, p.15). Malta has emerged from different historical traditions exhibiting similar and diverse pathways to these countries' higher education systems and labour markets before becoming an EU member in 2004. That is, the skills formation institutions in Malta show similarities and differences to the coordinated and liberal market economies. Malta's education system resembles

the UK's system (since it was a British colony and influenced by UK's educational system) and its vocational education and training system draws from the German system. As it becomes clear in the following chapters, Maltese practice draws on elements of these two models.

3.4 Many Discourses of Employability Skills

Governments have shifted the responsibility of graduate employability on to higher education institutions (HEIs). The debate is around whether higher education's role is to prepare the workforce of the future or to provide an educational stimulus, or both. A critical analysis suggests that producing skilled employees in order to compete in the global knowledge economy is a legitimate discourse**.** "Policy makers [including Malta] have shown increasing interest "in the transition of graduates from University to the labour market" (Osborne, 2008, p.16) and on how employable they are, given the massification in higher education.

Employability, in the context of higher education in many countries shows that the authority has shifted to the State. Public universities are in the majority, funded by government [including Malta] and it cannot be said that the latter demonstrates 'no undue influence on what Universities do' (Russell Group, 2010). This:

- can be in the form of "quality audits, research assessment exercises, budgets, performance indicators and special initiatives" (Boden and Nedeva 2010, p.40);
- can have implications on the "nature of universities' pedagogical practices and their curricula" (Boden and Nedeva, 2010, p.41);
- implies that state funded Universities, such as the University of Malta, need to demonstrate that they are performing well by setting "learning outcomes that designate measurable indicators of success or failure – the ability to *describe* or *calculate* rather than to *critically analyse*" (Boden and Nedeva, 2010, p.50).

Universities define the pedagogy and the curriculum, whereas academics provide the expertise in knowledge and skills, thereby producing inquiring minds needed by society and the economy. But this structure has been challenged due to the massification of higher education, the "widening participation, key

skills/employability agenda, lifelong learning" (Bell et al., 2010, p.3), "which are causing academic restrictions" (Jackson, 1999, p.430). In sum, higher education opportunities have become more accessible to students and as a consequence, there has been a great increase in student enrolment and credential devaluation which are legitimate discourses.

The curriculum and pedagogy are more focused on employability and skills have been embedded in the curriculum (Moreau and Leathwood, 2006). However, "it is inappropriate to assume that students are highly employable on the basis of curricular provision alone" (Yorke, 2006, p.7). If obtaining a university qualification is not viewed as an educational voyage of discovery, but rather, its sole purpose is to obtain earnings, then a degree would be reduced to a rigid and utilitarian process of addressing financial objectives. If students are viewed as customers, they may begin to demand more focused, specialised education and they will then tend to get less involved in university life.

Most employers have the expectation that "graduates are ready for the job and not prepared for employment" (Boden et al., 2010, p.20). "Complaints and concerns expressed by employers [in Malta] about deficiencies in skills in their new graduates, suggests that there is a problem of graduate employability – doing the job" (Arthur et al., 2007, p.40). This leads to the meanings given to employment and employability which is a legitimate discourse. To be employed (having a job) and to be employable (having the relevant skills) do not have the same meaning. A change in discourses of employment to those of employability means that the "employment question has been reformulated into the employability question" (Moreau and Leathwood, 2006, p.309). States focus on providing individuals with the tools to be better prepared for the labour market and to encourage them to be responsible for their own employability. Part of this discourse focuses on the importance of skills which individuals need to update due to the changing requirements of the labour market through lifelong learning. "Graduates, their skills and qualities are being given more importance during the recruitment process" (Moreau and Leathwood, 2006, p.311). When employers [in Malta] are faced with large pools of applicants with the same paper qualifications, they use other distinguishing characteristics such as evidence of suitability, assuming they have a university degree as a basic requirement for the job. This evidence can

include interpersonal skills, personal drive and self-reliance as well as the university they graduated from, the discipline they read, the course duration. "For aspirational jobs, graduates would need to [...] market themselves and show they are more employable than other candidates" (Brown et al., 2011, p.123).

3.5 Employability Frameworks

There have been many research studies on what constitute generic or key transferable skills and despite there having been convergence on what these refer to, there is no universal agreement on a specifically defined set of key skills. Various countries use different synonyms to describe these skills, some of which can be found in Table 10.

Table 10: Terms used in various countries to describe employability skills

Country	**Terms**
Malta	*'Soft'* skills *(elicited from the in-depth interviews in this research)*
United Kingdom	core skills, key skills, global skills
United States	basic skills, soft skills and workplace employability skills
Germany	key qualifications
France	transferable skills
New Zealand	essential skills
Canada	fundamental skills, employability skills
Australia	key skills, generic skills, key competences
Singapore	critical enabling skills
China	employability skills

Source: Lauder, 2013.

In Malta, the term *'soft'* skills is often used by key institutional actors to describe non-technical ones. The neutral term *'non-technical'* (skills) is used throughout this research study to avoid confusion. Employability can be analysed in terms of 1) a performance indicator; 2) a commodity; 3) skills, knowledge and attributes; 4) to meet employers' needs through employability frameworks, each of which is considered in turn.

Employability can be used as a performance indicator in terms of the employment rates of graduates as revealed in tracer studies. The concept of employability as a commodity is closely linked to government policy in that graduates represent a

valuable resource in the knowledge-based economy. The ability of graduates to be able to respond to the changing needs of a rapidly developing labour market is viewed as vital for economic growth. Employability can be defined as "a set of skills, knowledge and personal attributes that make an individual more likely to secure and be successful in their chosen occupation(s) to the benefit of themselves, the workforce, the community and the economy" (Yorke, 2004, p.21). There seems to be a reliance on personality and disposition, which may be outside the influence of HEIs. As aforementioned, employers view academic credentials related to the subject discipline as necessary, but give added importance to non-technical skills. Moreover, experience of work placements, volunteering and extra curricular activities seem to be salient during the recruitment process. Employability skills frameworks are central to investigating graduate employability.

This research is focused on how institutional actors interpret, respond to and influence graduate employability and what are their skill expectations. Employability frameworks present the skills identified by institutional actors, namely, employers. Comparisons of employability frameworks are presented in Table 11. Four such frameworks have been put forward since 2006 and are the result of inquiry about the employability skills needed for the labour market.

Table 11 indicates some agreement on the skills linked to employability among national and international institutional actors. The three employability skills, namely, communication skills, teamwork and problem solving, appear in all these frameworks. There is less agreement on other items, showing divergence among the institutional actors. That is, there is evidence that views on employability skills differ not only among institutional actors, but also within these groups of actors. This divergence, especially among employers, occurs due to a lack of shared understanding of skills. It is assumed that employers behave rationally when they recruit graduates, but there is evidence to the contrary (Brown, 2003). "Employers may want, for example, someone who is strong and decisive, but they will inevitably read these qualities differently in different applicants" (Moreau and Leathwood, 2006, p.309). An agreement on specific employability skills between two actors may have different interpretations of the meaning of these skills. In

sum, empirical studies on graduate employability can result in mixed findings. This research leads to the identification of the non-technical skills gaps in the accountancy, pharmachem and ICT sectors, as perceived by four institutional actors (Government, HEIs, Professional Associations and Employers) and as revealed in the three case study chapters 6,7 and 8.

Table 11: Comparison of Employability Frameworks

2006	2009	2011	2015
Kreber, 2006, p.5	Abraham and Karns, 2009, p.352	Lowden, Hall, Elliot, Lewin, 2011, p.12	World Economic Forum, 2016
Competencies higher education institutions should provide	Competencies identified by employers	Skills identified by employers	21st century skills by employers
Multiple countries	USA	UK	World
be able and willing to contribute to innovation and be creative	**communication skills**	**good interpersonal and communication skills**	**complex problem solving**
be able to cope with uncertainties	**problem solving**	**team working**	**coordinating with others**
be interested in and prepared for lifelong learning	results oriented	**problem solving**	**people management**
have acquired social sensitivity and communicative skills	Interpersonal skills	leadership skills (where necessary)	critical thinking
be able to work in teams	leadership skills	knowledge of the business	negotiation
be willing to take on responsibilities	customer focus	self-management	quality control
become entrepreneurial	flexible and adaptable	ability to use own initiative but also to follow instructions	service orientation
prepare themselves for the internationalisation of the labour market through an understanding of various cultures	**team worker**	ICT knowledge	judgement and decision making
be versatile in generic skills that cut across disciplines	dependable	literacy and numeracy relevant to the post	active listening
be literate in areas of knowledge forming the basis for various professional skills e.g. new technologies	quality focused		creativity

Source: Extract from Tymon, 2013.

Highlighted in bold = commonly cited items which appear in all frameworks.

"Generic graduate skills can be categorised as follows: precursory, complement, translation and enabling formation" (Barrie, 2006, p.223). The *precursor* concept is not viewed as part of the university credits. "I do not see how I am expected to be checking their spelling when my job is to lecture Biology" (Barrie, 2006, p.235). Therefore, this could be considered as being further duties to be carried out by reluctant academics. Some academics view generic attributes as *complementing* graduates' knowledge. These attributes would have been acquired during their university subjects and would be considered as separate outcomes to the learning of disciplinary knowledge. The *translation* conception refers to graduate skill learning outcomes being part of a university degree outcome. For instance, "it is valid that students appreciate corporate social responsibility as well as basic health issues" (Barrie, 2006, p.236). With respect to an *enabling* conception, it refers to: "abilities such as scholarly thinking, reasoning and scientific inquiry [which] are really part of the subject [and] they are the principles that underpin the body of knowledge …" (Barrie, 2006, p.237).

A number of studies highlighted that many employers criticise the fact that graduates do not have the skills they require (South West Observatory, 2013). "Employers and HEIs face employability issues and barriers related to different expectations, mind sets and priorities" (Lees, 2002, cited by Lowden et.al. 2011, p.4). The links between skills and productivity are "more complex than just equating skills to increased productivity" (Caruana, 2013, p.51). For example, Caruana, 2013 argues that labour productivity still lags behind in Malta in spite of the drive to increase educational attainment. The quality and relevance of the courses could also be one of the contributing factors.

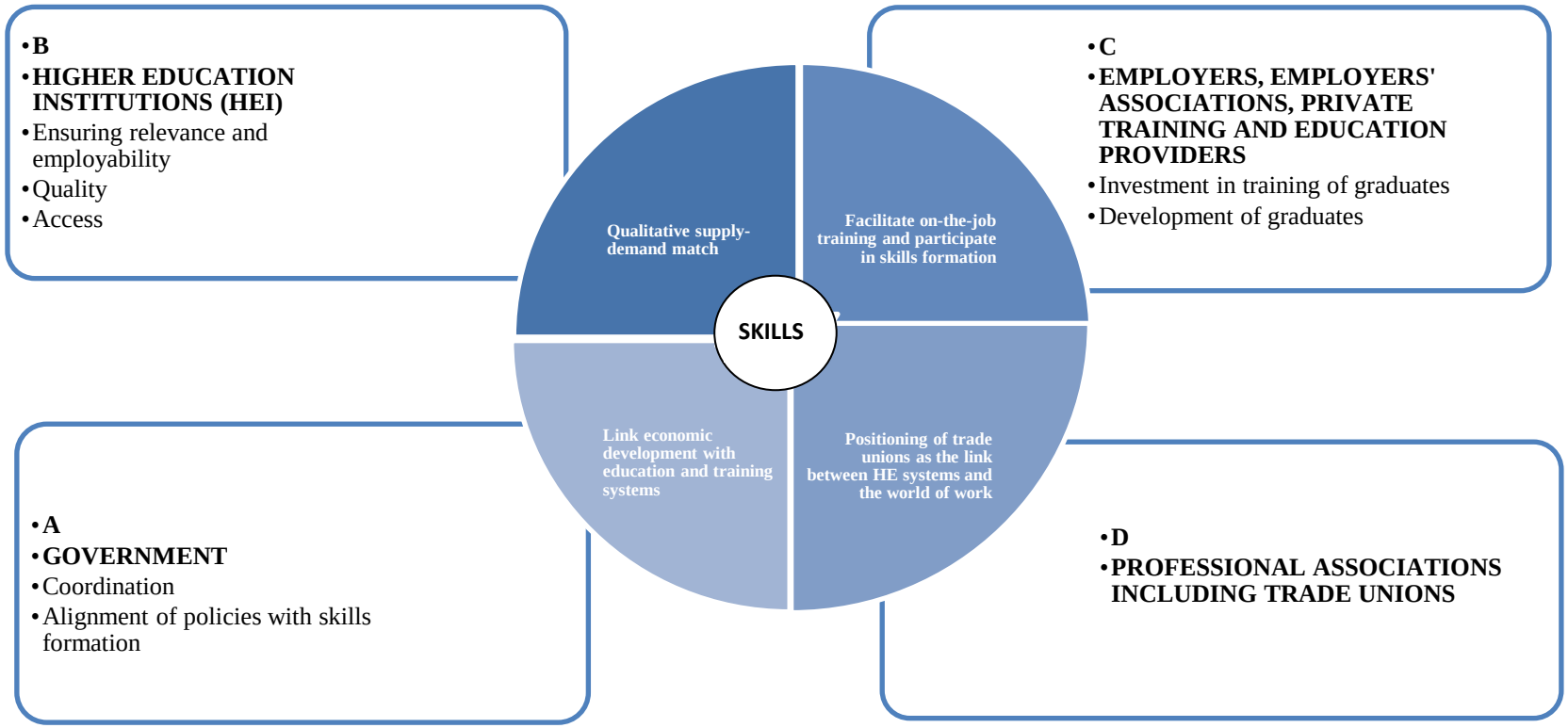
"Jobs are becoming more complex and there should be training interventions to support, accelerate and direct individual learning" (Sloman, 2007, p.8). This is resulting in skills gaps and shortages in the market, which are on the increase (ILO, 2013). Graduates exhibit employability if they are able to demonstrate their skills on the job. For example, graduate skills acquired in the "humanities might not be suitable for a scientific post where statistical analysis is required, which shows the "context-dependence of employability" (Yorke, 2006, p.12).

3.6 A national skills formation system: a conceptual model

The development of employability skills depends on "how institutional skills formation actors adapt and respond to employers' demands, technological progress and economic changes" (Schwalje, 2013, p.23). In the 1990s, HEIs were considered as the sole suppliers of skills. Today, governments, labour markets and organisations in addition to educational systems all play a part in skills formation. However, individuals and organisations do not invest in the development of employability skills unless there is a benefit. The objective of such a policy has been to increase qualification attainment to match high wage employment opportunities expected to be generated by high skill, knowledge-based industries. However, "Government intervention is required as its goals are political and economic" (Brown, 2003, cited by Schwalje, 2013).

Hoppers, (2007, p.13) observes that "an integrated conceptual model of skills formation must include the totality of other structured arrangements that provide people with a learning experience that develops skills for the world of work…" However, "these approaches to skills formation have lacked coordination and proceeded as distinct fields of inquiry" (Kupfer, 2012, p.9). A conceptual model (Figure 7) is devised by the researcher to demonstrate an integrated, systematic view of skills formation by key institutional actors.

Figure 7: Conceptual Framework of a National Skills Formation System: Institutions and Roles



Source: An (adapted) conceptual framework of a national skills formation system (Schwalje, 2013).

The following addresses the various elements of the conceptual framework (Figure 7).

A. The Role of Governments

The changing demands of the economy have led to the creation of the need for interdependence and collaborative networks among HEIs, private training providers, employers, associations, unions and other key actors for effective skills formation (Finegold, 1999; Powell and Snellman, 2004; Schwalje, 2013). Institutional skill formation actors need to respond constantly to evolving skills requirements in order to remain relevant to the labour market. In light of this need for adaptability, policy making and coordination of education along with training actors have emerged, as a preferred approach to national skills formation (Campbell, 2012).

The role of government in an integrated institutional approach to skills formation goes beyond the supply side policies for universities and training organisations. Moreover, the relationship between skills formation and labour markets is more nuanced than assuming that labour markets are homogeneous and that there is a balance between supply and demand (Brown et al., 2001; Kupfer, 2012; Schwaljie, 2013).

Key elements of skills formation systems are those institutions that prevent underinvestment of market-related skills by providing adequate regulation and effective coordination of institutional actors. In many countries, such as the UK and Germany, "the development of national skills policies – skills inventories, competency standards and accreditation frameworks – serve as a governance mechanism for policy guidelines. They also monitor the workforce supply and requirements, channel funds and ensure coordination in skills building efforts" (Schwalje, 2013 p.10). For governments to enhance the knowledge-based economy, four main skills formation coordination objectives are required. These are the following:

- to link economic development with the evolution of skills formation institutions;
- to ensure qualitative and quantitative supply-demand match between graduates and the labour market requirements;
- to facilitate training provision and participation in skills formation by employers;
- to address policies related to the under investment in the development of skills.

Aligning Macroeconomic policy with Skills Formation

The development of a country's economy, with increasing reliance on technology, demands higher levels of human capital, both in terms of basic and technical skills. "Upgrading of skills can be costly and countries may adopt an approach of investing less in skills formation for industries with low technologies" (Lall, 1999, p.3). As a result, skills shortages can delay the development of strategic new industries. Governments that shape and enhance the technological and industrial structure, create a need for skills labour that cannot be predicted by free market mechanisms. Therefore, education and industrial policies must be in place so that the two evolve symbiotically in terms of supply and demand. Training subsidies may help to align macroeconomic policy with skills development by providing workforce skills needed for emerging new industries. However, whilst subsidising education is justified in the light of societal externalities, subsidising specific training and skills formation for particular occupations is less justified as societal benefits decline over time for such investments (Ziderman, 2003).

Broad-based, Inclusive Skills Formation

Government economic policies that stimulate the creation and growth of enterprises are a mechanism for creating jobs as well as increasing demand for employability skills. However, the use of active labour market programmes is more effective as short-term measures than as remedies for market failures in the skills formation system or structural problems in labour markets (Angel-Urdinola, Semlali and Brodmann, 2010, cited by Schwalje, 2013, p.13).

B. Higher Education Institutions: Their Role

It is argued that the responsibilities of HEIs are to ensure that graduates are employable, align education systems with employer needs and adopt quality assurance practices. The complementary role of education and training systems to economic development suggests a critical role in aligning educational institutions with technological needs required by the economy. As countries develop, human capital requirements increase and industrial organisations become more competitive. Economic benefits have become a key driver behind education policy decisions and measuring success (Harris et al., 1995; Schwalje, 2013). "Qualification models and methods are being presented in

terms of the use of learning outcomes and competencies, levels and level indicators, subject benchmarks and qualification descriptors" (Adam, 2007, p.32).

Quality Assurance

Research has shown that HEIs are slow to adapt to changing needs from centralised curriculum design and with limited institutional autonomy. These supply-driven systems (for example, the university), find it difficult to respond to changing skills demand required by competitive economies (Ziderman, 2003). Since the cost of providing education represents a significant share of public expenditure, an insufficient public budget can lead to scarce institutional capital spending and a focus on system expansion rather than performance. Poor institutional governance results in outdated instructional methods and curricula, low quality standards and market lagging public policies for regulating private education and training providers (Schwalje, 2008; Schwalje, 2013).

C. Employers, Employers' Associations and Private Training Providers

Globalisation, trade openness and technology have led to new patterns of work organisation. Companies are moving towards more flexible and innovative forms of organisation and production to increase efficiency, accommodate technological change, respond to evolving consumer behaviour as well as adapt to broad macroeconomic forces. The trend to adopt new forms of organisation has led employers to demand skilled labour. In European countries, evidence shows that there is a demand for highly skilled employees, which has not been met, resulting in skills shortages. "Skills gaps arise in companies due to the internal deficiencies which, in turn, affect performance" (Higher Education Forum, 2010, p.10). This phenomenon will be further discussed in chapter five.

Companies such as financial entities, tend to pay higher salaries for highly demanded skills. Companies need to update their employees' skills so as to remain competitive and to address the general skills formation of pre-employment due to institutional failures. A lack of internal capacity to provide training, 'forces' organisations to depend on external private training provision. Employment of graduates with transferable skills from other companies enjoys the benefits of the training paid for by another competitor.

Due to inadequate training, policy solutions must be tailored to the root cause. Market failure of adequate skills formation and development can be addressed by sharing the responsibility between government and employers. This could be in the form of training subsidies, grant schemes, scholarships. These approaches are further discussed in chapter five.

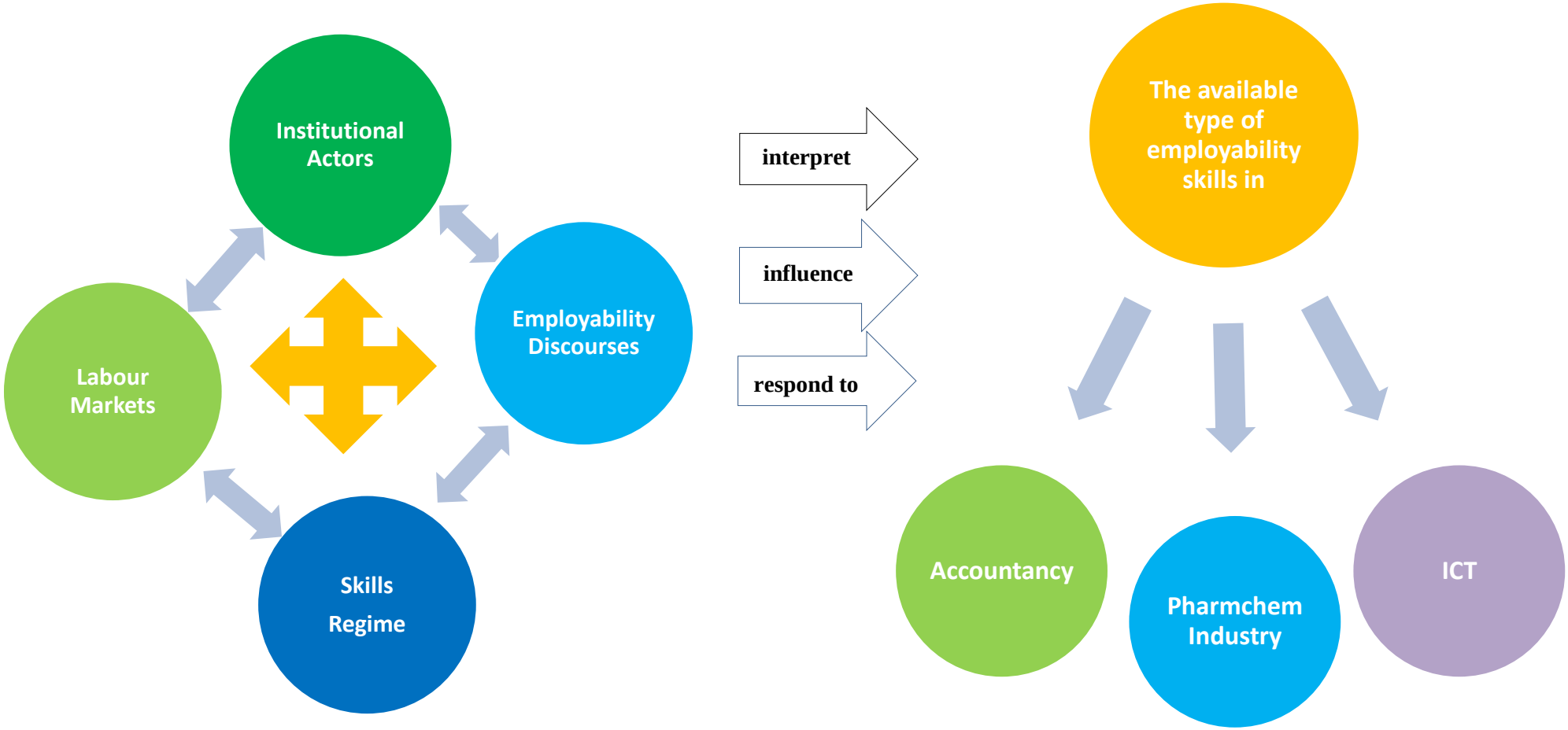
D. Trade Unions

Trade unions emphasise the importance of social partners' involvement in HEIs' planning, as they have unique observations of the labour market, particularly concerning the current and future needs of today's workers they represent. "These considerations are shared across the countries and are coupled with an assessment of the effectiveness of the Bologna process and the opportunities it has brought about for the younger generations" (European Commission, 2013, p.234).

Research Design

A conceptual framework of a national skills formation system: institutions and roles (Figure 7) has been applied to this study as per Figure 8. The framework demonstrates the relationship of institutional actors (Government, HEIs, professional associations and private employers), how they articulate employability discourses and, in turn, create skills regime, impinging on and interacting with the labour market. This framework "explains the concepts and variables and the presumed relationships among them" (Miles and Huberman, 1994, p.18) and is the foundation of the research design articulated in chapter 4.

Figure 8: Conceptual Framework of a National Skills Formation System: Application to this Study



Source: researcher's analysis, compilation and design, 2013

3.7 Conclusion

This chapter has highlighted a number of employability skills discourses that are relevant to my research. The precise meaning of *'employability'* and other terms recurring in this study are set out in Appendix 1. To produce skilled employees and in turn, graduates in order to compete in the global knowledge economy is a salient discourse. Massification implies equal access to HE opportunities. This is a legitimate discourse. Government policy in Malta is to develop graduate skills further for different types of high level employment. However, dissatisfaction of employers exist in relation to the transition from academia to employment by graduates, because "employability-related learning occurs at the workplace and not in HEIs" (Yorke, 2003b, p.478). Various approaches can be introduced to bridge the gap. "There needs to be more synergy between HEIs, Government and businesses" as Morley (2001, p.131) suggests.

The demands of employability and state control of higher education have also impacted on universities' pedagogical practices, where "the desired knowledge and skills outcomes were socially and economically inquiring minds" (Boden et. al., 2010). Universities, in general, need to show that they are performing well and their learning outcomes are based on critical analysis. This may imply that the University is not '*developing minds*' but is educating students with a skill set and factual information. University students may have a view that a degree will give them an economic return. This implies that educational attainment is only a means to getting a job rather than or in addition "to an educational voyage of discovery" (Boden and Nedeva, 2010, p.50). This is further discussed in chapter five.

Most employers consider a graduate's degree as given and are more interested in the acquisition of employability skills. "Research has found that employers look for these employability skills in a graduate as evidence of suitability," (Purcell et al., 2002, p.10, cited by Moreau and Leathwood, 2006, p.308) assuming they have a University degree as a basic requirement for the job. For specific employment positions, first, it is necessary to ensure that the graduate has the relevant

qualification in an academic discipline as a prerequisite for the job. This will be explored by means of the three case studies (chapters 6,7 8).

Conceptual frameworks of national skills formation systems have been discussed in this chapter, highlighting commonalities. The employability skills referred to are those that are more relevant in today's labour market. The understanding, contribution and provision of skills formation institutions in Malta will be explored and the research methodology (discussed in the next chapter), will be based on these employability frameworks.

Chapter 4: Research Methodology

"All research is a practical activity requiring the exercise of judgement in context; it is not a matter of following methodological rules."

(Hammersley and Atkinson, 1994, p.23).

4.1 Introduction

This chapter explains the methodological paradigm, i.e. the interpretivist approach adopted in this thesis and delineates the way instruments were applied in order to empirically address what and how key institutional actors[23] seek to interpret, respond to and influence perceived gaps in graduate employability skills in three prominent sectors in Malta's economy: accountancy, the pharmaceutical industry, information and communication technology. These sectors have been chosen because they are at the cutting edge of the market in EU countries, including Malta and play a significant role in the economy. Reference is made to the importance of transferability in relation to these employability skills. The chapter begins with a discussion of the interpretivist approach to methodology, followed by the research design and the process. It identifies the key institutional actors included in the study. The data sources are identified, including archival and official documents as well as elite interviews. In-depth, semi-structured interviews and document analysis are used to investigate the institutional processes of employability discourses and skills regime. Analysis of official statistics is used for the purpose of examining trends in graduate educational attainment and shifts in the labour market.

4.2 Methodological Framework

A researcher's ontological and epistemological stances are crucial in determining the methodological framework (Grix, 2002). Both qualitative and quantitative strategies can provide insights regarding social phenomena. They are not only different "methods of doing the same thing", for they have "different strengths and logics" (Maxwell, 2005, p.17). The selected method (qualitative) "depends on what [I am]

[23]This thesis does not investigate the skills that graduates think they should have to be employable in the labour market. That is, the focus is on the perception of institutional actors on graduates' employability skills and how they can interpret, respond to and influence them in the labour market.

trying to find out" (Silverman, 1998, p.78). Graduate employability in selected sectors in Malta is explored and a theoretical explanation is developed as the data are collected and analysed. This research is data driven and adopts an inductive approach. It is important to use this approach as it allows meanings to emerge from the data where patterns and relationships can be identified. Understanding the reasons may lead to a theoretical explanation.

> "Consistent with the inductive model of thinking, a theory may emerge during the data collection and analysis phase or be used relatively late in the research process as a basis for comparison with other theories" (Creswell, 1994, pp.94-95).

Using qualitative methods when working within an interpretivist paradigm is more appropriate (Lincoln and Guba, 1985). Qualitative research is about exploring the quality experience rather than measuring 'probabilistic' quantities. It is intended "to articulate experiences embedded in human interaction" (Boffa et al., 2013, p.104). Qualitative methods excel in gathering in-depth and detailed data that mirror participants' subjective understanding of the social context through their own experiences (Rubin and Rubin, 2005). The nature of the current inquiry requires an in-depth analysis of the institutional actors' experience and perceived realities on skills gaps in the three selected academic disciplines. The intellectual aim of this thesis is to understand how institutional actors perceive skills gaps and craft policy responses. The researcher is interested in how participants make sense of their actions and experiences and "how their understandings influence their behaviour" (Maxwell, 2005, p.17). This is the interpretivist approach to social science (Bredo and Feinberg, 1982; Geertz 1973; Rabinow and Sullivan, 1979; Maxwell, 2005). The practical aim is to generate "results and theories that are understandable and experientially credible both to the institutional actors being studied and to others" (Bolster, 1983, p.296).

It is evident that choosing a suitable approach is important and the choice is justified based on matching the tools used to address the research aims. The core of the research design relies on the case study method – comparative references and contextual analysis. The plan was to compare data across the three aforementioned

academic disciplines, looking for patterns, similarities and differences. As a result, a qualitative method approach was deployed, combining data collection through document analysis with in-depth interviews. References to statistical information were made throughout the research process. The main justification for using a qualitative method approach was the following: triangulation, complementarity, development and expansion (Johnson and Onwuegbuzie, 2004, pp.21-22). From the above definitions, this study involves using qualitative methods primarily for triangulation purposes. The use of document analysis and case studies through semi-structured interviews corroborates the results from studying the same phenomenon. Triangulation enhances the integrity of findings and "strengthens the validity and reliability of the constructs and conclusions that emerge from this study" (Meyer, 2001). Malta's national skills formation system, explored by means of the three case studies relies on analytic rather than statistical generalisability (Yin, 2009). The concepts and constructs derived from this study have relevance to other disciplinary settings.

Personal Reflexivity

Before explaining my research design approach, it is important to describe my positioning in the research process. "Reflexivity is commonly viewed as the process of a continual internal dialogue and critical self-evaluation of the researcher's positionality as well as active acknowledgement and explicit recognition that this position may affect the research process and outcome" (Berger, 2013, p.220). It is crucial throughout all phases of the research process, including the collection and analysis of data and drawing conclusions (Bradbury-Jones, 2007). The researcher's positioning includes personal characteristics and experiences, linguistic tradition, beliefs, biases, preferences as well as political and ideological stances (Berger, 2013).

These positions may impact on the research in three ways:

1. Respondents may be more willing to share experiences with a researcher whom they perceive as being sympathetic to their situation (De Tona, 2006);
2. They may shape the nature of the researcher-researched relationship which affects the information that participants are willing to share;

3. The researcher's background and world view would affect the way it is constructed, the language used, the questions asked and the lens chosen for filtering information gathered from participants. This may shape the findings and conclusions of the study (Kacen and Chaitin, 2006).

Before embarking on this PhD, the researcher worked in public, quasi and private organisations, mainly as as a management trainer and human resource manager. In addition to these roles, she is regularly employed on the academic staff of the University of Malta, initially on a part-time and eventually a full time basis. Her work experience in these roles built relationships which helped in learning about the research topic and understanding nuanced reactions of the participants (Berger, 2013). A rapport was cultivated with many respondents during work activities, which rendered them receptive and cooperative during the interviewing process. The interlocutors expressed confidence that, having occupied a similar position as a human resource manager in the past, the researcher would understand them. A professional approach was adopted and the respondents were treated with respect, establishing an open channel of communication. Any nuances in the language and mind frames of the interlocutors on perspectives of graduate employability were detected. Sensitive and unofficial discussions were also held with some respondents as they "positioned [the researcher] in the role of an insider" (Padgett, 2008 p.304). The researcher has worked with three out of the four institutions, namely, government, higher education institutions (still in employment) and private employers, and was given ready access to respondents, including an in-depth interview with the Prime Minister of Malta. As an *'insider'*, this helped the researcher intuitively grasp their institutional voices, enhancing accuracy and authenticity (Buckner, 2005; Macbeth, 2001). Reflexivity also helped maintain the ethics of the relationship between the researcher and the research by 'decolonising' the discourse through a monitoring of the research process (Berger, 2013).

4.3 Research Design

This section of the research methodology chapter explains the research design. "The research questions, propositions and unit of analysis will lead the research design into identifying the data that are to be collected" (Yin, 2014, p.36). To ensure that the research questions are answered appropriately and in a clear manner, the design

will provide the framework for "collection and analysis of data" (Bryman, 2008, p.31). From the five basic research designs, case study design was selected. Comparative case studies are "particularly useful for generating theoretical and practical insights" (Burnham, et al. 2004, p.285) and have been used in this research.

Case study Design

The case study approach was adopted to explore what the actors do to address graduate employability skills and focused on the disciplinary perspective and not the enterprise level. Interpretivist researchers are interested in developing "richly detailed and nuanced descriptions of their case study research" (Ridder et al., 2014, pp.373).

> "They will work inductively, analysing their data, identifying their themes and patterns in these data, locating this in existing literature in order to refine, extend or generate theory" (Saunders et al. 2016, p.185).

The case study approach adopted in this research is a hybrid model of the exploratory and evaluative types. An exploratory study is "a valuable means to ask open questions to discover what is happening and gain insights about a topic of interest" (Saunders et al., 2016, p.181). Evaluative case studies are aimed at finding out how well something works (Saunders et al., 2016). This choice is justified as there is a lacuna in academic research on the exploration and evaluation of this issue. The research first involves adopting an exploratory approach by looking into the current status of graduate employability skills and skills gaps in the three disciplinary areas of this research. This is followed by an evaluative approach and provides an assessment of the effectiveness of this phenomenon and its challenges faced by the institutional actors. The three case studies are compared "to identify patterns that are tacit or implied and extracted by a careful mental process of logical analysis of content from all data sources" (Germain et al., 2000, p.351). The rationale for using multiple cases is to explore whether findings can be replicated.

Exploratory research involved a combination of a search of the literature, interviewing 'experts' in the subject and conducting in-depth individual interviews. These interviews were semi-structured and relied "on the quality of the contributions

from the participants to help guide the subsequent stage of [my] research" (Saunders et al., 2016, p.181). These type of interviews sought "to understand and translate the world of the participant" (Boffa et al., 2013, p.105). An exploratory study clarifies the understanding of a phenomenon. Therefore, the research questions and the interview guide asked during the data collection to explore this phenomenon generally begin with '*What*' and '*How*.'

Evaluative research is concerned with assessing the effectiveness of policies and processes. Questions asked during data collection to seek an evaluative understanding begin with or include the words 'What' and 'How' or 'Why.' (Saunders, 2016, p.176). As part of the evaluative study, comparisons are made between the 'disciplinary case studies' asking the questions beginning with 'which' 'when' 'who' and 'where', thereby drawing out patterns and instances of convergence and divergence.

> "An evaluative study may produce a theoretical contribution where emphasis is placed on understanding not only 'how effective' institutional actors are in interpreting, responding to and influencing skills availability in the labour market but also 'what' and then comparing this explanation to existing theory" (Saunders et al., 2016, p.176).

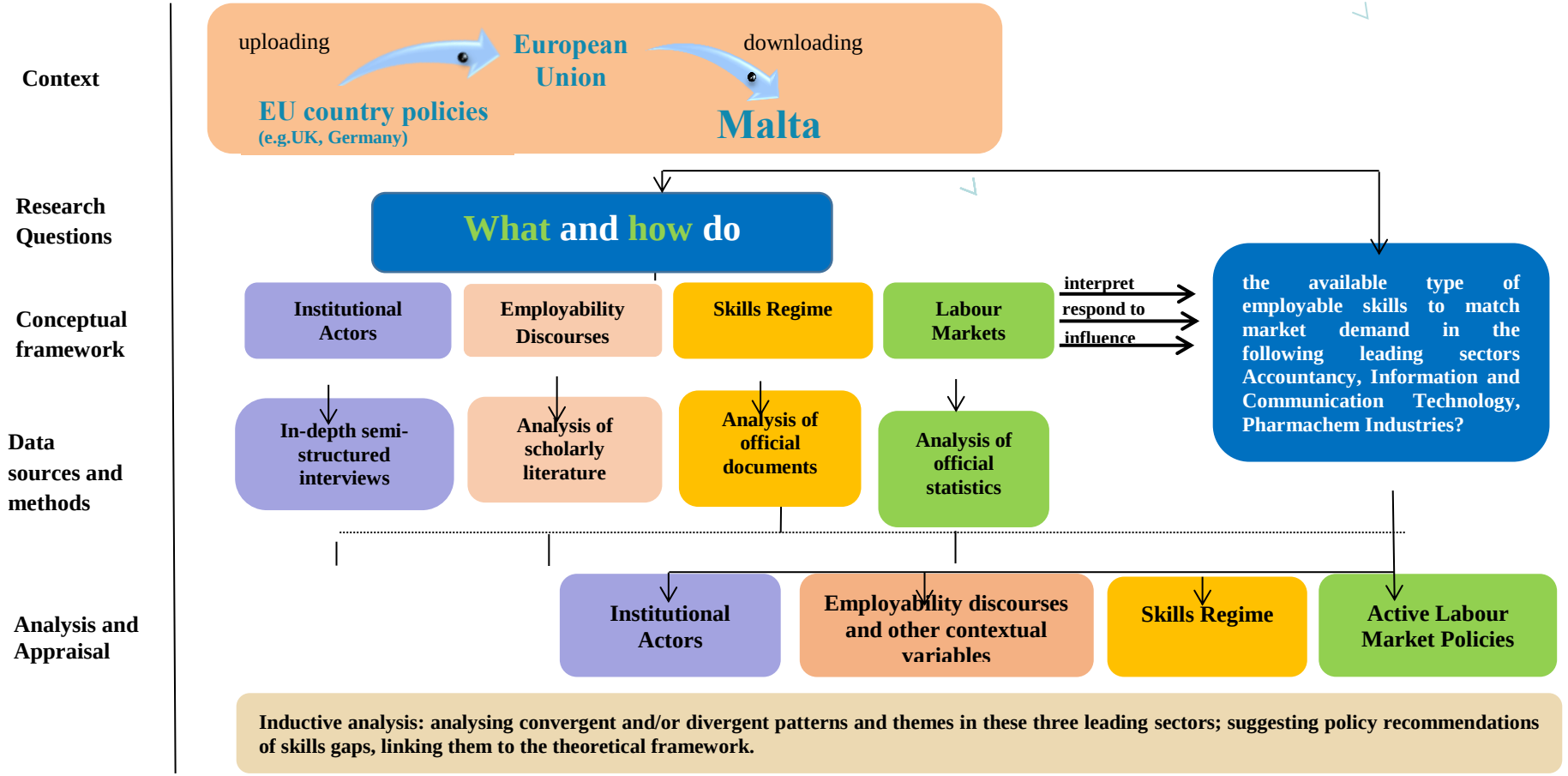
This case studies approach "is not theory testing and generalisation, but inductive theory building from rich qualitative case data that allows the researcher to identify patterns and relationships and to understand the underlying reasoning behind them" (Borg, 2014, p.107; Eisenhardt and Graebner, 2007, p.25).

The Research Model

A model was devised that presents "a logical progression of stages from problem formulation to the generation of conclusions necessary in planning or carrying out the study" (Creswell, 1997, p.26; Marshall and Rossman, 1999, p.46; Maxwell, 2005, p.56). This model has been diagrammatically presented so as to allow for conceptualising the study (Figure 9). In essence it proposes four variables – the key institutional actors, employability discourses, skills regime and the labour markets.

The model explores what and how the institutional actors interpret, respond to and influence the available type of employability skills to match market demand in the three selected sectors: accountancy, ICT and pharmaceutical industries. It postulates how these four variables contribute to graduate employability.

Figure 9: Research Design of the study



Source: researcher's analysis, compilation and design, 2013

The overall purpose this research is to explore the current scenario of graduate employability in specific disciplines with a view to understanding how institutional actors perceive skills gaps and craft policy responses. The conceptual framework is "a tentative *theory* of what is happening and why. Theory provides a model of why the world is the way it is" (Strauss, 1995, p.7; Maxwell, 2005, p.45) and will give new insights and broaden the understanding of the phenomenon being investigated.

The research design [is] a reflexive process operating through every stage of [the] project" (Hamersley and Atkinson, 1994, p.24). This approach to design provides a "model of, as well as, for research" (Maxwell, 2007, p.45). It is a "real entity" and is intended as a guide to understand the actual structure, plan and carry out the research. It represents the actual relationships among the components, each of which addresses issues essential to the coherence of the study – the overall aim, the research questions, the conceptual framework, methods, analyses and validity. "In this model, the different parts of the design form an integrated and interacting whole, with each component linked in a linear sequence" (Maxwell, 2005, p.50). Moreover, it provides a structure for this study "that communicates and justifies the design decisions and the connections among these" (Maxwell, 2005, p.51).

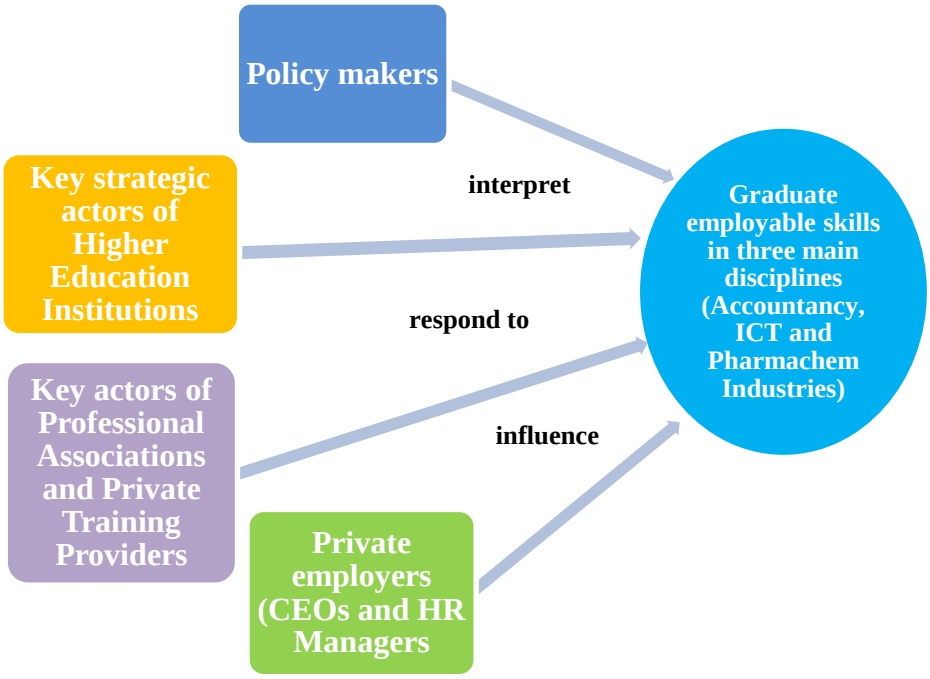
4.3.1 Mapping the Institutional Actors

For the purpose of this research, the strategic interlocutors within key institutions (i.e. a bounded context) were identified as units of analysis,[24] who could offer an 'elite' voice to the interpretation, response to and influence on graduate skills availability in the labour market. The strategic interlocutors are those who hold an ascribed role of legal power, authority and/or influence to speak, act and represent a wider actor group in relation to policy making to address skills gaps. The conceptual framework comprises four institutional actors namely policy makers, strategic actors of higher education institutions (The University of Malta and MCAST); key actors of professional associations and training providers (including unions) and private employers (CEOs and HR Managers of companies employing graduates in accountancy, ICT and pharmaceuticals). Figure 10 below demonstrates, in broad

[24]A unit of analysis refers to the primary focus of the research study and is reflected in the core construct in the research question. It is the 'who' or 'what' at the centre of the study. (Patton, 2015, p.138).

terms, the four institutional actors and their interpretation, response to and influence on skills availability in these three disciplines.

Figure 10: The Institutional Actors



Source: researcher's analysis, compilation and design, 2013

The institutional actors were categorised at three levels, namely, the policy making, executive and supervisory, expert and implementer levels. Their mapping is further explained in section 4.5. The institutional actors represent different sectors, making them organisationally distinct (in terms of remit and strategic focus). They have their own complexities, are not homogeneous and each has their own agenda. This implies that the institutional actors do not always have defined boundaries and at times, overlap in their role and function, causing border fluidity.

4.4 Research Methodology

Sources of Data

Having identified the key institutional actors as aforementioned, a qualitative method was selected. There are five main qualitative research approaches, depending on the research question and the philosophical stance. Since an epistemological foundation of interpretivism was adopted which lies within the qualitative paradigm, the

qualitative tools - document analysis and semi-structured interviews were deemed appropriate as they enabled a detailed investigation and examination of the interpretation of the key actors during their social interactions (Flick, 2009; Silverman, 2013). Qualitative research tools are suitable for addressing research questions that demand explorations of social reality within specific contexts (Snape and Spencer, 2003). This section outlines the approach taken in relation to document analysis and semi-structured interviews so as to provide a methodological justification for it within a commitment to interpretive epistemology and analysis, before explaining how the research was carried out.

Document Analysis

Document analysis is defined as a "systematic procedure for reviewing or evaluating documents – both printed and electronic material and requires that data be examined and interpreted in order to elicit meaning, gain understanding and develop empirical knowledge" (Bowen, 2009, p.27). It is applicable to qualitative case studies as it delivers rich descriptions of organisations (Stake, 1995; Yin, 1994). Archival and official documents used for systematic evaluation as part of the study, take a variety of formats, which can be divided into three categories: public, private and personal documents. According to Merriam (1988, p.118), "documents of all types can help the researcher uncover meaning, develop understanding and discover insights relevant to the research problem."

> "They provide background and context, additional questions to be asked, supplementary data, a means of tracking change and development and verification of findings from other data sources. Documents may be the most effective data when informants have forgotten the details" (Bowen, 2009, p.31).

A corpus of documentation comprising legal and policy documents, reports and publications issued by the Maltese Government was identified as relevant for analysis in this research. They were divided into seven categories as illustrated in Table 12.

Table 12: Number of official documents used for analysis

	Documents	Number
1	Supranational documents: European Union	6
2	National documents: The State	28
3	Higher Education Institution documents	14
4	Policy documents related to Professional Associations and Training Providers	6
5	Policy documents related to Accountancy sector	17
6	Policy documents related to Pharmachem sector	7
7	Policy documents related to Information and Communications Technology sector	22
	Total	100

Source: researcher's analysis and compilation, 2016

Evaluating the Evidence

The documents highlighted in Table 12 (and detailed in Appendix 4) were assessed according to Scott's (1990) four criteria namely: authenticity – to verify whether documents are genuine and of unquestionable origin; credibility – to assess how 'distorted' the contents are likely to be or biased in outlook; representativeness - to evaluate whether there is evidence to support the arguments being put forward; and meaning – to ensure that documents are clear and comprehensive.

The State produces statistical information and textual material of potential interest, such as official reports and policy documents. They are in the public domain and combining them with data from interviews would minimise bias and establish credibility. Such material can be seen as authentic and as having meaning, i.e. being clear and comprehensive. Atkinson and Coffey (2011, p.30) suggest that:

> "documents need to be recognised for what they are – namely texts written with distinctive purposes in mind and not as simply reflecting reality. They argue that documents should be examined in terms of the context in which they were produced and their implied readership."

When documents are viewed in this way they are considered significant. "Any document should be viewed as linked to other documents, because they refer to and are a response to other documents" (Bryman, 2012, p.555). Official documents are

'unobstrusive' and 'non-reactive' and analysis is a low cost method to obtain empirical data. The documents are stable; include the exact names, references and details of events, which are advantageous in the research process. They provide a broad coverage, and cover a long span of time as well as many events and settings (Yin, 1994). They are representative and give evidence in supporting arguments. This does not mean that the documents are not biased but can give meaning to this research.

"A systematic review of documentation provided background information" (Bowen, 2013, p.36) that helped the researcher understand the socioeconomic and political context in which educational and economic policies were conceived and implemented from 1970 to date. Whilst document analysis offers considerable insights for this study, the documents may not be objective as different actors present their own perspectives (Bryman and Teevan, 2004; Scott, 1990). In particular, "elite actors are able to distort, or conceal truths" (Berry, 2002, p.680). Ontologically speaking, social entities are considered social constructions built up from the perceptions and actions of social actors. The documents were treated:

> "as representing some account or reflection of a constructed reality as it is perceived and as it is intended to be communicated, by the actor groups as authors" (Bryman, 2008, p.130), "inseparable from the social context in which they are produced and the assumed/intended relationships between the author and reader" (Durrant, 2012, pp.94-95).

These documents "attempt to make sense out of some subjective and constructed interpretation of reality" (Durrant, 2012, p.94). They often promote the reader towards certain interpretations while curtailing the potential emergence of contrary perspectives. This would be significant in document analysis and semi-structured interviewing. In fact, the documents not only provided contextual richness in the research, for they were particularly useful in pre- and post-interview situations. They provided leads for asking additional, probing questions, which enriched the interview data, thereby serving a useful purpose.

Semi-structured Interviews

Interviewing helps the researcher collect and analyse data, complementing document analysis, because it provides access to those perspectives that are in comparison closed or at least, not publicly known (Lilleker, 2003, p.208). Despite an interview guide being devised to cover a range of themes related to this study and answer the research questions, a dialogue took place in order to probe beneath their answers (May, 2001). In-depth interviews were conducted with institutional actors to gain deeper insights and meanings into employability skills and skills gaps. The interviews very often began with a simple question as to what the institutional actors thought *'employability'* meant in order to break the ice and to reduce apprehension (where applicable). Generally open-ended questions were used in these in-depth and semi-structured interviews to "allow respondents to give answers in their own way" (Fink, 2013, p.10). Since my research drew on institutional actors' perspectives on employability skills and gaps in the labour market, "trust and rapport were essential in creating an interview relationship and allowing me to go beyond 'official' responses to a representation of social reality as it was perceived by them" (Durrant, 2012, p.97).

4.5 The Research Process

Social research is a process that generates knowledge in a "structured, organised and systematic way" (Neuman, 2007, p.3). The following sections explain and justify the process of exploring the landscape, the purposive sampling method as well as the access to data and their analysis that were pursued in this study. Miles and Huberman (1994, p.42) argue that "knowing what you want to find out leads inexorably to the question of how you will get that information."

Exploring the Landscapes

In 2014, six months were spent exploring the Pharmachem and ICT local landscapes[25] to understand better and deepen the knowledge of these three disciplines as well as earmark the interlocutors to be included in the interview sample. Eight interviews were carried out with Actors from Government, HEIs and private employers in the different disciplines to understand the workings, dynamics and

[25]The researcher worked with an audit firm for seven years and was familiar with the accountancy landscape and its key players.

interplay between players in the field. The context was mapped out based on these findings, which contributed to the preparation of an interview guide.

The Interview Sample

Since an interpretative approach to the analysis of the institutional actors was adopted, in-depth interviews with elite actors of key institutions were held. Through their "high levels of knowledge on the subject matter" and "general intellectual and expressive abilities" (Burnham et al., 2004, p.231) they helped to "tap into political constructs that may otherwise be difficult to examine" (Crawford and Keast, 2009, p.9). Elite interviewing has been repeatedly adopted in policy analysis (Richardson, 2014). "Participants are [selected] in a strategic way so that those sampled are relevant to the research question" (Bryman, 2012, p.418). This is called purposive sampling, which is a non-probability form of sampling. This is where "the subjective judgements of the researcher are used in selecting the sample" (Remenyi et al., 1998, p.21). Purposive sampling uses "information rich cases … to learn about central issues of great importance to the purpose of the research" (Patton, 2002, p.227) and does not allow for generalisations to a population. The key actors (units of analysis) were selected because they had a particular strategic/elite role in representing a set of perspectives about graduate employability skills and because of their relevance to the research. These interlocutors were mapped out on three levels, namely, the policy making, executive and supervisory, expert and implementer levels (Table 13), being selected based on their association and connections to skills and skills gaps in accountancy, ICT and pharmachem graduates. The researcher's insider knowledge provided an understanding of the hierarchy of these organisations and was able to identify a sample of individuals who were "particularly knowledgeable about the issues under investigation" (Schutt, 2006, p.155), thereby enhancing the research credibility and validity.

The following interlocutors formed part of the interview guide (Table 13).

Table 13: Mapping of Institutional Actors interviewed

Levels	Government	Higher Education Institutions	Professional Associations and Training Providers	Private Employers
Policy making **(Policy making)**	Policy makers Permanent Secretaries of Government Institutions CEO NCFHE	Rector, University of Malta Principal, MCAST	Directors General of the main Unions Director General, Malta Chamber of Commerce, Enterprise and Industry	Chairpersons Chamber of Commerce sections Director General, MEA President Chamber of Pharmacists
Executive and Supervisory **(Actor specific)**	Specific directorates intimately involved in the technical elements: Accountancy Board Medicines Authority MITA	Faculty Deans, of FEMA, ICT	Section Secretaries of the Unions CEO and technical Director, MIA	CEOs of pharmaceutical industries audit firms ICT companies
Experts and Implementers **(Sectoral specific)**		Heads of Department, Pharmacy Science ICT Accountancy	Training providers Coordinator, AIM Professional Academy Director, Richard Clarke Academy	HR Managers of pharmaceutical industries audit firms ICT companies *(where applicable)*

Source: researcher's analysis, compilation and design, 2016

During the course of elite interviewing, one of the interlocutors highlighted the fact that the pharmaceutical industry also employs graduates in B.Sc. (honours) Chemistry and/or related science degrees (as well as MCAST's Applied Science graduates). These graduates are recruited for similar positions in Pharmaceutical Industries, making the labour market somewhat more complex. The relevant actors in the interview sample (N=70) were included so as to be able to capture the complexity of the labour market in a highly scientific area.

During the interviews, the participants were asked whether they could identify other additional interviewees and who met the requirements for the study (i.e. exhibited the same relevant characteristics and roles in strategic positions). Snowballing, as it is termed, in qualitative research is used to supplement the purposive sampling approach so as to ensure that "a high calibre and robust representation of the institutional actors" is achieved (Durrant, 2012). The use of snowballing within this research was advantageous as actors, who the researcher had no previous knowledge of, but who could offer relevant information, were included. Some interlocutors were willing to be interviewed when they were informed that their competitors or contemporaries had recommended them. Nevertheless, my sampling frame was continually referred to when making decisions about pursuing interview leads. In fact, some interlocutors voluntarily suggested other interviewees whom they thought would be valid participants, given the research subject.

Accessing the interview sample

The appropriate strategy for gaining access to interlocutors was considered. A letter of introduction was devised (Appendix 3), which included information about the objectives of this study, an assessment of what was needed from them and a tentative timeframe regarding when to hold the interview. The letter of introduction was, at times, altered so as to use the appropriate language. The letter of introduction was sent to the interlocutors attached to an email after having requested an interview. The researcher was more successful when the intended interview participant was spoken to directly, to explain and arrange a meeting. Moreover, networking at conferences helped to gain access to senior policy makers and other strategic actors to whom access was often barred by their gate keepers.

The interview guide

The semi-structured interviews were used to probe beyond the published documentation so as to explore the deeper meaning, tensions and contradictions in the interpretation, response to and influence of skills availability and the skills gaps in the labour market. Twelve interview guides (Appendices 5-16) were developed for the four institutional actors on three different levels, namely, the: policy maker, actor specific and sectoral specific levels. The interview guide is described as a more structured list of questions to be asked in semi-structured interviewing (Bryman,

2012, p.712). Identical open-ended questions in the interview guide were included in the same order, which also permitted inductive probing. The thematic guides were prepared, each having a number of topics (with probing questions) for each level.

The policy maker thematic guide was divided into two main topics consisting of probing questions on:

1. The institutional actors' roles and responsibilities;
2. Skills gaps in the labour market.

The thematic guides for the executive and supervisory as well as the expert and implementer levels had the same six main topics of exploration with probing questions. These were the following:

1. Institutional actors' general views and synergy on the economy, skills and employment of graduates;
2. Employability discourses;
3. Synergy among institutional actors;
4. The labour market and employment;
5. Skills regime;
6. Skills gaps.

The probing questions for the policy, actor and sectoral specific interlocutors had similar questions on the same topics. For example, '*To what extent are you concerned about skills gaps in the labour market?'* Other probing questions were included depending on the institutional actor being interviewed. This meant that whilst there were some common questions, others had to be adapted according to each sector and interlocutor.

Pilot study

A pilot study was held prior to my main research between January and February 2015. "The purpose of a pilot test is to refine my questions so that respondents will have no problems in answering the questions and there would be no [issues] in analysing the data" (Saunders et al., 2016, p.273). The initial pilot interviews strengthen the interviewing style of questioning. The pilot study consisted of twelve interlocutors from the accountancy sector, selected randomly from the policy, actor

and sectoral levels. The accountancy sector was used as the pilot study to set the pattern for the next two sectors (interviewees highlighted in bold in Appendix 2).

The first set of investigations was exploratory and experimental. The pilot study was a means of pausing and reflecting on the approach, the proceedings and outcomes of the interviews. The appropriateness of the questions and the reliability of the data collected for the individual questions were assessed. "The researcher was able to produce comprehensive field notes leading to a fuller understanding of the situations being studied" (Remenyi, 2013, p.195). It helped spot the deficiencies and strengths early, for example, unclear questions, so as to be able to take remedial measures and to fine tune or eliminate questions, where necessary. It should be noted that some interlocutors preferred to reply to questions in the Maltese language. As a result, the questions were verbally translated into the Maltese language for their benefit.

Qualitative interviewing

Qualitative, semi-structured, elite interviews with institutional actors at policy, actor-specific and sectoral levels were held, adopting a flexible approach. At times, the interview took the shape of a conversation rather than a question-answer format. Jargon was avoided and examples were given when the participants wanted clarifications (Boeijie, 2010).

The main fieldwork was carried out in Malta between February and July 2015. 70 interlocutors participated in this study. Scholarly literature does not concretely provide any "description of how saturation [was] determined and no practical guidelines for estimating sample sizes for purposively sampled interviews" (Guest et al., 2006, p.60). Patton (2002, p.244) comments:

> "There are no rules for sample size in qualitative enquiry. Sample size depends on what you want to know, the purpose of the inquiry, what is at stake, what will be useful, what will have credibility and what can be done with available time and resources."

In other words, saturation is determined by the researcher and this happens when "new information produces little or no change to the code book" (Guest et al., 2006 p.65).

The summer period in Malta proved to be difficult at times where some appointments were postponed, cancelled and rescheduled. However, the whole sample was interviewed except for two potential interlocutors, who were unable to find a suitable time slot during the data collection period. The interviews ranged from one and a half to four hours. Many interlocutors felt comfortable sharing official and unofficial views on the research area in question. Many extended their one hour time allocation for the interview. The data obtained from these in-depth interviews were of exceptional value and this method proved to be an effective way of gathering official, personal and unpublished information about graduate employability.

During the sessions, points were jotted down, highlighting some quotations and emerging issues. Insights were noted. Some interlocutors made reference to related documentation and explained where to retrieve them. The documentary evidence combined with data from interviews in this way helped to minimise bias, thereby enhancing the research's credibility (Bowen, 2009).

Data collection

All the primary interview data collected during the fieldwork process were recorded using a digital audio-recording device and saved in digital format on the researcher's computer. An accurate *verbatim* record would have been impossible without recording. The main advantage of a digital recording is that its quality is far superior to note taking. It is also possible to enhance the sound so that background noises are filtered out (Bryman, 2012). "The main threat to a valid description…is the inaccuracy or the incompleteness of the data" (Maxwell, 2005, p.89).

The interviews were transcribed *ad verbatim* by the researcher and transcribers whereby "recordings of research conversations are turned into textual material (Poland, 2008, p.884). Some interviews were held and transcribed in the Maltese language. They were later translated into English after having been subjected to analysis. This is because original transcriptions contained the interviewees' views of policy and thoughts. Translating interview data into another language may bring changes to subtle meanings since vocabulary in one language may not be the same in another. The original meaning may be lost in translation because it involves imposing the interpretations of the translator or researcher which would impact the

subsequent analysis of the data. Therefore, transcribed data remained in Maltese until sections were used for the writing up of the findings of the thesis. The transcripts were checked for accuracy by reviewing and correcting any transcription errors, known as data cleaning. Data, resulting from the interviews was internally verified with the respondents for queries, clarification purposes (where applicable), strengthening the credibility of the conclusions in chapter 9.

Each transcription was saved as a separate word processed file, given a file name for consistency purposes so as to maintain confidentiality and preserve anonymity. The interview data was initially coded to help the researcher classify, arrange, organise and manage the corpus of information and examine relationships within the data. A set of themes and concepts were generated, labelled, sorted and synthesised. The focus of these groupings was initially shaped by the analytical framework presented in chapter 3. These findings on the national skills formation system are explored by means of the three case studies found in chapter 6, 7 and 8.

4.6 Analysing Qualitative Data

The principle of thematic analysis (Braun and Clarke, 2006) was used to carry out the analytical process of qualitative data. Thematic analysis is a method of identifying, sorting, analysing and reporting patterns or themes within the data. Braun and Clarke, (2006, p.77) argue that thematic analysis offers a "rigorous, accessible and theoretically-flexible approach" to analyse qualitative data. It involves the following steps: "transcribing the interview material in full, reading the material several times, selecting the units of significance or meaning, identifying general themes, categorising and classifying the data" (Cote and Turgeon, 2005, pp.71-75).

The analytical process involves a progression from description (where the data are simply organised to elicit similar patterns and summarised) to interpretation where there is an attempt to theorise the significance of the patterns, their broader meanings and implications in relation to previous literature (Patton, 1990 quoted by Braun and Clarke, 2006, p.84). The steps in thematic analysis include the following: familiarisation with the data, generating initial codes, searching for themes; reviewing the themes, defining and naming the themes and producing the report

(Braun and Clarke, 2006, p.87). In this study, themes or patterns within their data were identified using a bottom-up method. The transcripts were read and re-read to actively search for meaning and patterns. To conceptualise the data patterns and relationships, different codes were sorted into potential themes and sub-themes which were of significance to the research question. Data were divided into separate themes; others were combined or dropped due to insufficient data.

The last step of thematic analysis - producing the report - 'tells the complicated story of [my] data in a way that convinces the reader of the merit and validity of [my] analysis' (Braun and Clarke, 2006, p.93). The *'latent'* themes entailed further probing and looking beyond what was happening on the surface (Braun and Clarke, 2006).

The policy documents (Appendix 4) were read beforehand in preparation for interviewing the interlocutors. However, a rigorous analysis of the texts was necessary in order to compare the documentary records with the outcomes of the in-depth interviews. Nvivo 10 software package could not be used for coding the materials because most of the policy documents were printed and could not be found electronically. Some electronic documents were not easy to input into the NVivo10 program either because they were too large or due to a different language code. Instead, the selected documents were processed using colour coding and followed the themes that emerged from the in-depth interviews. While using these 'two methodological tools in parallel, my interview data was rooted in the historical and political context as set down in the documentary records' (Berg, 2007).

4.7 Methodological Limitations

Every research investigation has its own limitations no matter how thorough the methodology may have been. Patton, 2002 acknowledges that there is no perfect approach to research. This research is exploratory, focusing on institutional actors' perceptions of employability skills gaps of graduates in the three disciplines. It does not quantitatively measure skills gaps or seek and consult the students and graduates' views on the importance and requirement of employability skills for the working world. Qualitative research must first take place in order to identify how institutional

actors perceive and identify what are the gaps. This research would serve as a basis for measuring the extent of the employability skills and their gaps through further quantitative research in the future. The selection of a qualitative over quantitative method was "trading depth for breadth" (Patton, 2002, p.227). The three disciplinary sectors were selected because it is there that the highly advanced and evolving occupations are to be found. Graduates in these fields are in great demand and are immediately employed by related companies on a full time basis, on completion of their University course.

Case studies are often criticised for focusing on in-depth scrutiny of selected cases while ignoring others which may be of relevance to the illustration of the conceptual framework. These limitations set constraints on generalisability and utility of findings (Mckenzie et al. 1997).

From the comparative analysis of these three disciplinary areas, patterns, instances of convergence and divergence will emerge from the fieldwork data. The fieldwork data is triangulated with document analysis beginning from 1970s to date on public policies affecting skills and skills gaps in the labour market during this period. The 'thick' description emerging from official documentation provides "a database for making judgements about the possible transferability of findings to other milieu" (Lincoln and Guba, 1985, cited by Bryman, 2012, p.392).

Document analysis and elite interviewing are the tools used and are suitable for addressing research questions that demand "explorations of social reality within specific contexts" (Snape and Spencer 2003, cited by Ritchie and Lewis 2003, p.11). The limitations of documents as a source of data are that they are non-interactive and non-reactive. Where meanings can be checked with an interviewee, documents remain silent. Documents can be interrogated and analysed but they are generally produced independent of a research agenda and do not provide sufficient detail to answer a research question.

Although in-depth interviews provide much more detailed information than what is available through other data collection methods, such as surveys, the interviewees may be prone to bias. In-depth interviews do not allow for generalisations and

random sampling methods are not used. However, they provide valuable information. In-depth interviewing is time-intensive and careful planning to conduct interviews, transcribe them, and analyse the results were factored into the fieldwork time frame. A sufficient sample size was reached when the same themes[26] and issues emerged from the interviewees.

It was important to apply interviewing techniques such as making the interviewees comfortable, showing interest in what they had to say, avoiding closed questions, using appropriate body language. Previous experience in interviewing techniques helped the researcher in this process. Elite interviewing of the institutional actors was carried out on an individual basis, giving them the opportunity to speak freely, openly and confidentially. The interlocutors were not able to interact and share with other actors through focus groups due to their time limitations and availability. A thematic limitation may be to state the frequency with which particular themes are reported. This is because it might imply that the frequency of occurrence in the sample was representative of the likely occurrence in the wider population which may not be the case.

The study mainly focuses on the Malta context. It has its own historical and socioeconomic characteristics and its own particular institutional path dependencies on employability skills and skills gaps. This research is not a comparative study (not the scope), and may shed light on how particular characteristics influence employability skills and skills gaps. A limitation of this research that may be put forward is that it is specific to the context of Malta. This approach does not partake of the advantages of a comparative study, yet the value of focusing on a particular context brings to the fore particular patterns which can be utilised as a basis for future comparative studies.

As with all qualitative inquiry, this research was limited by the researcher‘s capability as the primary instrument of scientific inquiry (Patton, 2002). The study was discussed with other researchers to ensure that the methodology is within

[26]The emerging themes of this study are compared to their theoretical definitions (Appendix 1) in Tables 20, 35, 41.

accepted norms. This complemented the novice status as a researcher, impinging on this study.

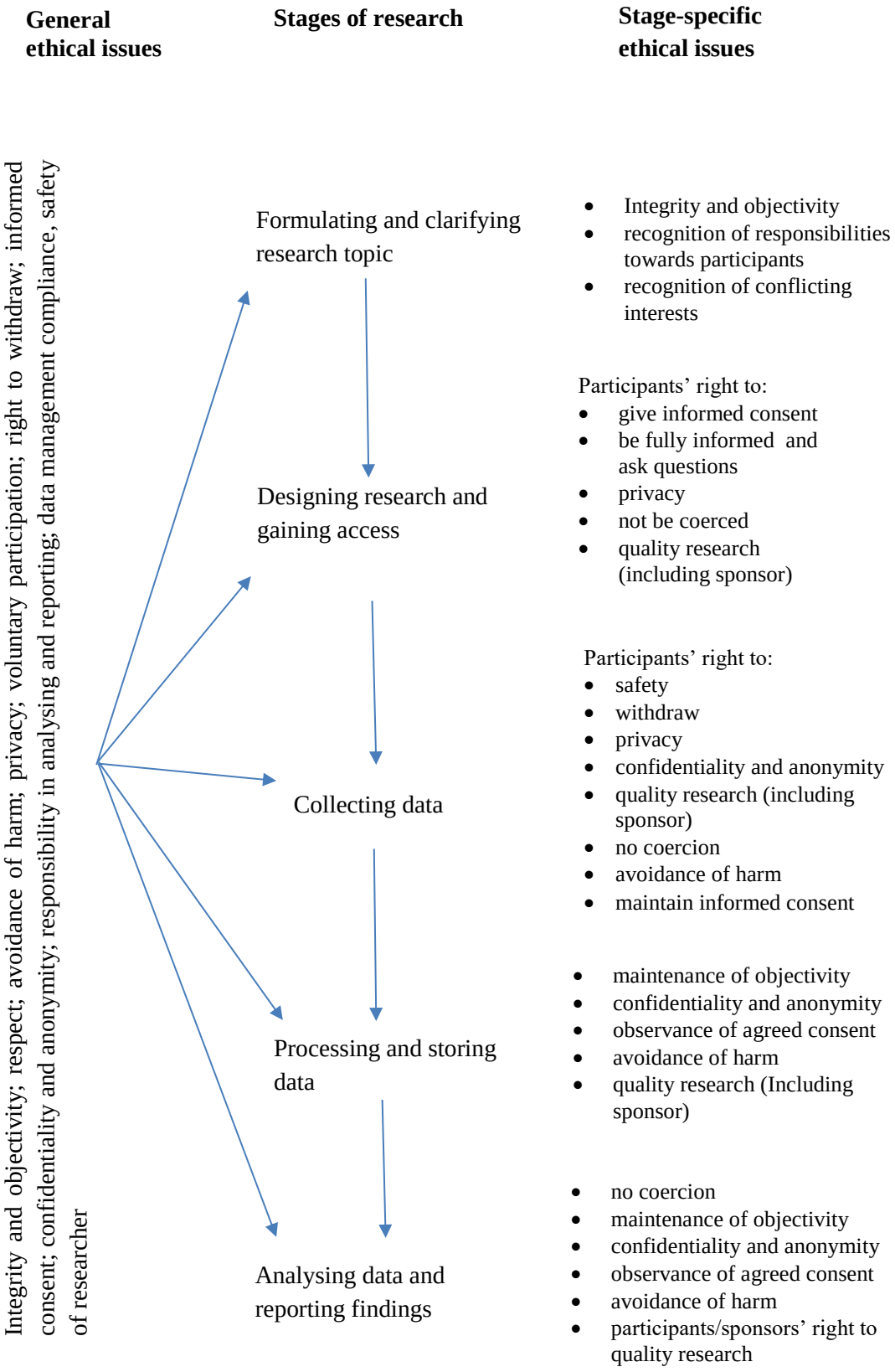
4.8 Ethical issues at specific stages of the research process

Ethics have become a cornerstone in quality research. Ethical considerations arise for all research involving human subjects. Ethical principles will be applied to the context of the research. They include the following:

> "integrity and objectivity of the researcher, respect for other, avoidance of harm, privacy of those taking part, voluntary nature of participation and right to withdraw, informed consent of those taking part, ensuring confidentiality of data and maintenance of anonymity of those taking part, responsibility in the analysis of data and reporting of findings, compliance in the management of data, ensuring the safety of the researcher" (Saunders et al., 2016, pp.243-245).

Figure 11 gives a general rationale and development of each principle followed by an explanation on how ethical issues were dealt with during the different stages of the research.

Figure 11: Ethical issues at different stages of research



Source: Saunders, Lewis, Thornhill, 2016, p.244

Ethical issues during design and gaining access

When planning to conduct the research in line with the ethical principle of not causing harm, pressure was not applied on intended participants to grant access. Elite interviewees are rarely vulnerable cohorts. However, care was taken to quote correctly to avoid misinterpretation (Richardson, 2014).

Each participant was informed about participation rights and use of data. According to Boeijie, (2010, p.4) "respondents need to be informed of what they are consenting to prior to the collection of the data." Interviewees were verbally informed, followed by email correspondence with an attached letter explaining the aims of the study.

Before each interview began, an explanation of the aim and scope of the research was given and interviewees were advised of their rights to refuse answering specific questions and having the interview recorded. They were also informed who would have access to the data - the researcher herself, University of Bath's lead and co-supervisors and transcribers. A selection of the recordings was directly transcribed by the researcher. On completion of the interview, each interviewee received a thank you note and was informed that if they objected to the data being published for academic purposes they would notify the researcher. This helped clarify the boundaries of consent and comply with data protection legislation where the research may involve the collection of confidential, personal or sensitive personal data. Receipt of objections related to anonymity of the interviewee and company were duly noted and respected. The researcher was completely honest and transparent and the participants were not deceived.

Ethical issues during data collection

Document analysis was based on official documents that were available and used explicitly for academic purposes. Sources were acknowledged and referenced. Interviewees, who consented to being interviewed, were briefed on the research scope before the start of the meeting. In-depth interviews may include "open thoughts, feelings, knowledge and experience not only to the interviewer but also to the interviewee" which can lead to ethical concerns (Patton, 2002, p.405). Participants were given the opportunity to refuse.

During the interview, the researcher sought ongoing clarifications to ensure that the interviewee was being understood. The data was collected accurately and fully, using digital recording to avoid exercising subjective selectivity during the interview and maintaining objectivity. These recordings have been uploaded onto the researcher's computer and are password protected. The location and timing of data collection activities were generally held at the interviewees' place of work or coffee establishments during the daytime.

Ethical issues related to analysis and reporting

Presenting the data correctly and accurately is vital for the analysis and reporting stage. Without objectively collected data, analysis of the research would be impaired as the data may be misrepresented. A lack of objectivity can distort conclusions and recommendations. The researcher sought to "anonymise the identities of those who specifically requested by using a level of generalisation which ensures that others are not able to identify them" (Saunders et al., 2016, p.259).

4.9 Conclusion

To conclude, this chapter outlined the inductive methodological and analytical approaches adopted in this study. The focus of this research is mainly exploratory and evaluative through a qualitative approach. The institutional actors were identified, selected and mapped out for inclusion in this research as part of the research design. The case study approach was adopted for this research where in-depth semi-structured interviews with institutional actors were employed and the data triangulated with document analysis and statistical data.

The chapter highlighted a transparent and detailed account of the research process, explaining the purposive method of sampling, access to the data and data analysis used in this study. This chapter concluded with methodological limitations and ethical considerations surrounding this research.

Chapter 5: Graduate Employability in Malta: an appraisal

"Companies say they don't have the right people with the right skills at the right place at the right time."

(Arkless, 2015, in WEF, p.15).

5.1 Introduction

This chapter investigates how Maltese policy makers address graduate employability, using the conceptual model developed in chapter 4. This incorporates the state of the labour market, the action of institutional actors, employability discourses generated by labour market interaction and the skills regime created or modified as a consequence.

A labour market overview in relation to demand and supply is discussed with reference to the educational attainment within EU member states. Employability discourses are analysed in light of the labour market and higher education including interactions between institutional actors. Factors which lead to the creation of skill gaps within this regime are based on the interpretation, influence and response to skills availability in the labour market.

For presentation purposes, all quotations from primary interviews appear in *italics* in the text of this chapter and in subsequent chapters.

5.2 Labour market developments

The development of the labour market is analysed through two major policy horizons: 1990-2000 and 2000-2011.

Period 1 [1990 – 2000]

Malta's economic policies focused on protective barriers against imports, especially consumer goods during the 1970s and 1980s. "The economy was sheltered from foreign competition through trade protectionism" (National Employment Policy [NEP], 2014, p.11). Industry survived despite obsolescent technologies, over-manning and a wage freeze (1982-1987). Employment was stimulated by increasing public sector staffing.[27] Following a change of government in 1987, economic strategy shifted to a high-skill, high-wage economy. Business responded to new

[27]Between 1985 and 2000, public sector employment grew to about 7,000 employees (NEP, 2014).

incentives, but skill shortages appeared in rapidly expanding fields, such as engineering, accounting, information technology and management.

Skill deficiencies were not addressed. Industries that set up in Malta faced and continue to face skill shortages which discourage foreign investors. Private sector employment creation contributed to economic restructuring, which gathered momentum in 1993-1994 (ETC Annual Report, 1994). In 1997, employers were surveyed to understand better what the 'educated labour' industry expected. Graduates were expected to be innovative and able to think as well as manage. "This is in line with the demands of a 'fit', 'intelligent' or 'learning' organisation – important attributes in competitive markets and in 'client-centred' service activities" (Baldacchino et al., 1997, p.42). Against that, *"graduates are considered trainable people but tend to suffer from poor business management skills and from managing relations"* (ACC05). Besides academic qualifications and recommendations from previous employers (where applicable), employers sought experience, cognitive, communication and technical skills, and ability to work under pressure. Between 1990 and 2000, employers continually sought to upgrade processes through a skilled workforce.

Period 2 [2001-2012]

From 2000 to 2010, numerous manufacturing companies shed labour, particularly in textiles, footwear, clothing and furniture. Though service-oriented companies were flourishing, the skills they required could not be furnished by the then existing labour force.

The reactivation of Malta's application for accession to the EU in 1998 entailed wide-ranging legislative and policy harmonization. In 2000, the Lisbon Strategy, which embodied the European policy for the labour market, responded to two challenges: globalisation and ageing. Jobs and growth were emphasised when the Strategy was relaunched in 2005. The Europe 2020 strategy for smart, inclusive and sustainable growth emphasised the need to increase labour market flexibility and participation. The present European Employment Strategy (EES) encourages information and best practice sharing with regard to job creation.

Twenty four guidelines (2005-2008) intended by the European Commission as foundations for national reform programmes (NRP) outlined the Union's macro- and micro-economic and labour market reform priorities. The Europe 2020 strategy focused on a smaller set of 10 guidelines, the Europe 2020 integrated guidelines. (Appendix 17). Economic policy guidelines are intrinsically linked with employment policy guidelines. European employment guidelines 7 to 10 tackle "the issues of improving employability, developing entrepreneurship, encouraging adaptability and equal opportunities" (Fleckenstein, 2006, p.285). The EES "has been the catalyst to develop and deepen employment analysis at EU level" (Fischer and Tholoniat, 2006, p.123) and its success depends on "the political will and voluntary action of member states" (Fleckenstein, 2006, p.289).

Each member state adopted reforms and labour market policies (LMPs) to tackle problems such as segmentation and skills shortages, by encouraging training and education, instilling a more positive approach to prolonging the working life of individuals and creating more inclusive labour markets. Labour market policies cover three types of interventions: services, measures and support (Van Berkel and Moller, 2002). The unemployed are encouraged to participate in the labour market. Other active labour market policies include measures related to skills and lifelong learning. The EES also introduced a measure that at least 40% of youths would have a degree or tertiary level diploma by 2020 and "Malta's goal is set at 33% for tertiary level achievement" (Ministry for Finance, 2014, p.5).

Upon joining the EU in 2004, Malta experienced an escalation in tertiary education enrolments as well as increases in the participation rate of females and older workers in the labour market and those continuing their studies. The proportion of workers engaged in lifelong learning increased. In contrast, in countries such as Germany and the UK, the EES appears to have had just a "small visible impact on employment policy making, policy and performance" (Ardy and Umbach, 2004 p.v; Azzopardi, 2013, p.181).

Malta's adoption of the EU *acquis* increased legal protection for workers (Theophanous et al., 2007). This was accompanied by a shift from job security to employability associated with lifelong learning. The changes in the economy and labour markets created "the need to formulate training and employment policies and establish appropriate institutions to deal with these new demands" (Theophanous et

al., 2007, p.68). "[T]ourism, health and education, the arts, real estate, retailing, communication and financial services as well as higher value-added products such as pharmaceuticals became the mainstays of the economy (Azzopardi, 2013, p.182).

Rapid technological change and the spread of economic activity across national boundaries transformed the Maltese employment scenario. The labour force depends on Malta's international competitiveness and ability to attract foreign direct investment. Moreover, "the private sector was seen as the main engine of economic growth with the public sector fulfilling legal and regulatory functions and providing public goods" (Joint Assessment of the Employment Policy Priorities of Malta, 2001, p.8). Public enterprises were liquidated or privatised. Nonetheless, since employment and productivity increase sustain growth,

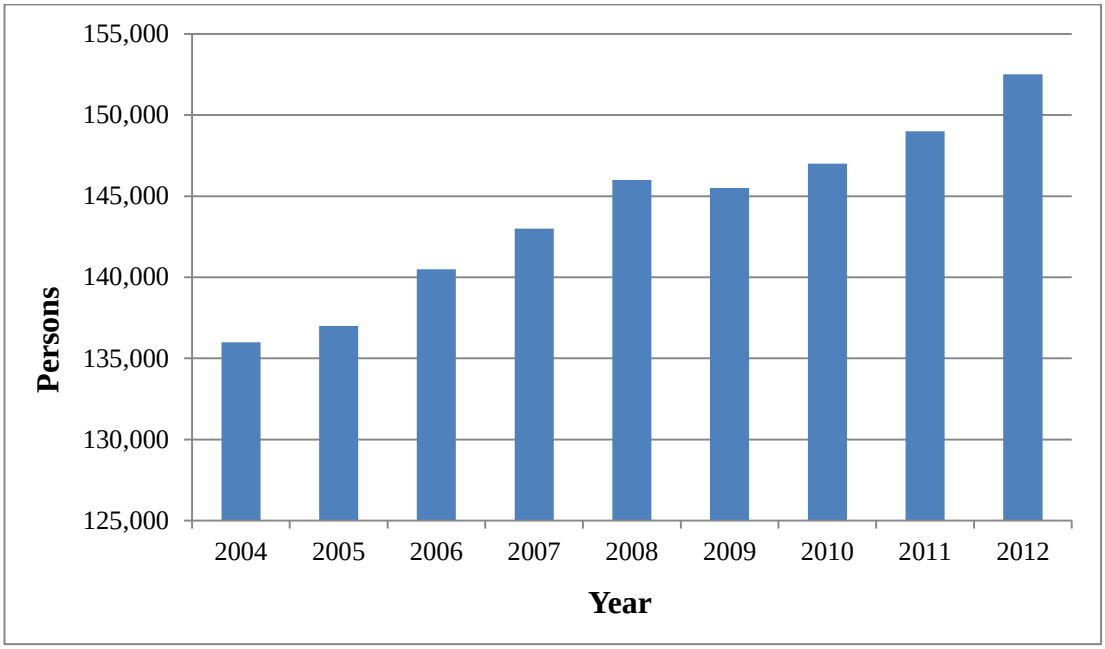
> "the skill levels of the labour force remain[ed] a concern in the context of necessary technological modernisation. The constituted bodies for commerce and industry regularly note the difficulties involved in finding enough workers skilled in IT and electronics. Technical education has lagged behind market requirements... Significant skill shortages also remain in financial services, health and tourism" (Joint Assessment of the Employment Policy Priorities of Malta, 2001, p.11).

There was a shortage of VET graduates. The spending on VET in 2001 was calculated to be 0.44% of GDP (JEP, 2001, p.12), compared to 8% on education. The Government responded to the shortage by establishing MCAST to coordinate vocational education and training (VET) provision at ISCED levels 1-8 as highlighted in chapter 2. MCAST supports employer efforts to upgrade workforce skills; they are represented on the Board of Governors.

5.2.1 Labour Demand

Malta has experienced consistently rising labour demand since 2004 (except for 2009 during a brief recession). The full time gainfully occupied rose from 137,979 in 2004 to 152,306 by 2012, (NSO, 2012; 2013) (Figure 12).

Figure 12: Full time gainfully occupied persons



Source: The National Employment policy, 2014, p.21

The number of full time gainfully occupied persons rose again after 2009 due to the policy measures implemented to mitigate the recession. Since skilled labour was scarce, there was minimum flexibility in recruitment and dismissal policies. Labour demand showed a positive trend, although it varied across sectors. Losses of jobs were experienced in construction, repair and installation of equipment and machinery during 2001-2012. Employment shrank in the hotel industry due to rising costs and low sectoral profitability. The continued growth in demand for services that require both high and low skilled workers drove job creation. At present, there is a demand for highly skilled labour across various sectors:

> "I-gaming and betting activities, management consultancy, computer programming and consultancy, and legal and accounting activities employing an additional 3,400 workers during the period under review" (NEP, 2014, p.22).

Part-time employment is also rapidly increasing: the public sector is one of the biggest employers. Cumulatively, 55% of Maltese private employers (NEP, 2014, p.28) cannot seem to find suitable candidates for specific high skill roles.

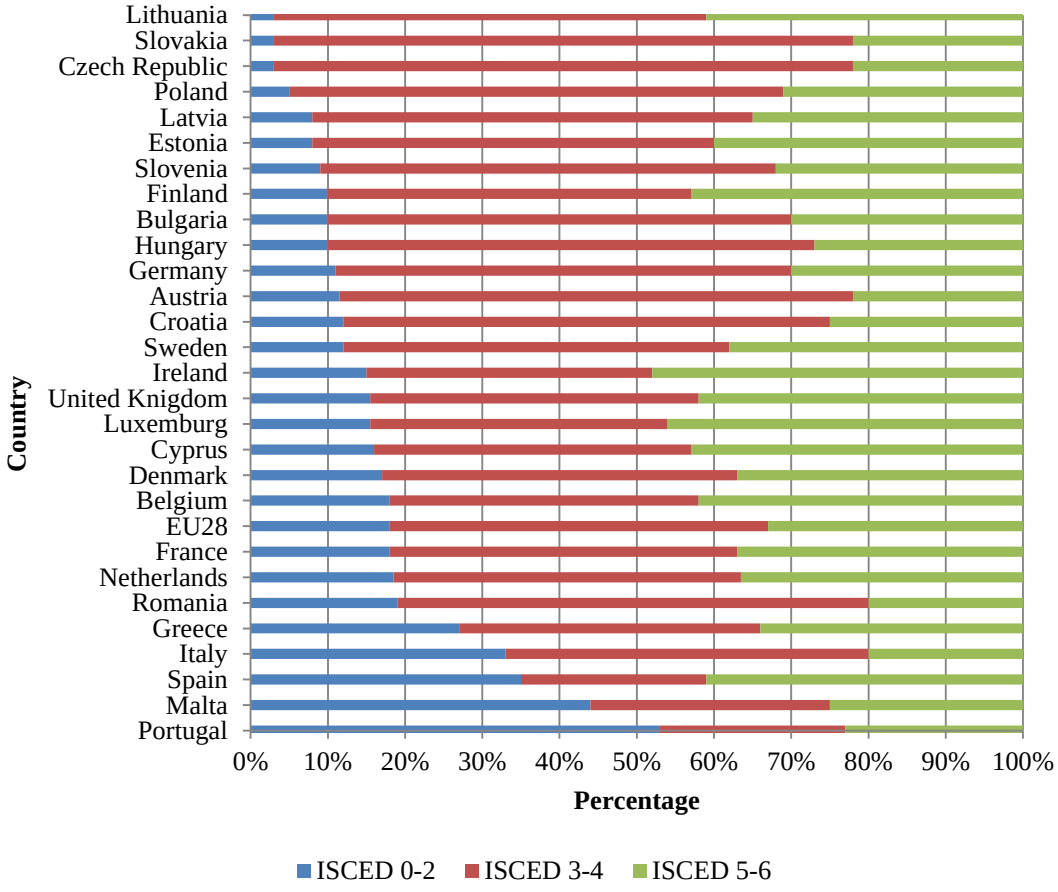
5.2.2 Labour Supply

'Labour supply' denotes the number of persons (employed full-time or part-time, or registered unemployed) who can deliver labour market services. Between 2000 and 2012, Malta's employment ratio rose from 57.5% to 61.5%, because of the increase in women entering the workforce; the forecast for 2020 is 70%. Further, foreigners fill an increasing number of vacancies with the national share of total employment dropping from 98.3% in 2004 to 92.9% by 2012. Employees over 40 years old comprise 40% of the total workforce and women in this bracket preferring part-time work.

5.2.3 The Maltese Workforce

Workforce composition (20-64 years) by educational attainment across the EU is demonstrated in Figure 13 below.

Figure 13: Workforce (20-64 years) composition by highest level of education attainment



Source: The National Employment policy, 2014, p.46

From the table, Malta has a high percentage of the working population (20-64 year olds) with the lowest scale of educational attainment (ISCED 0-2) (Eurostat, 2014). In recent years, there has been a substantial improvement with 71.2% of all qualified individuals with ISCED 0-2, having upskilled (Eurostat, 2014). Malta ranks twenty first out of EU28 (2014) in terms of tertiary educated workers.

MCAST also contributed to improving educational attainment. The proportion of workers having an educational attainment of ISCED 3-4 (SEC and matriculation levels) grew from 15% in 2000 to 22.7% by 2014. Yet Malta still has the third lowest share of workers with this level of educational attainment. 19.5% of MCAST graduates have a tertiary qualification (ISCED 5-8).

Education and Training (ET) 2020 set seven EU benchmarks for that year, two of which address targets for higher education completion and transition to the labour market, the others being early childhood education, basic skills, school leaving, lifelong learning, and mobility between countries. Progress on the ET 2020 benchmarks and core indicators of member states is set out by the Education and Training Monitor, 2015 (Table 14).

Table 14: Extract of key indicators and benchmarks

Key Indicators and Benchmarks			**Malta 2014**	**EU Average**	**Target 2020**
Tertiary education attainment (age 30-34)	Share of population aged 30-34 years who successfully completed tertiary education at International Standard Classification of Education (ISCED) level 5-8. [EU labour force survey data 2014].	Male	22.9	33.6	/
		Female	30.5	42.3	/
		Total	**26.6%**	**37.9%**	At least 40% (2020) Malta's target is 33%
Employment rate of recent graduates	Share of employed 20-34 year olds having successfully completed upper secondary or tertiary education (ISCED 5-8) for one to three years preceding the survey and who are no longer in education or training. [EU labour force survey data 2014].		**91.7%**	**80.5%**	At least 82% (2020) Malta's target is 70%

Source: European Commission, 2016

ET2020 reports (2014) that Malta's employment rate for tertiary graduates (aged 30-34 years) (ISCED 5-8) was 91.7% (EU LFS, 2015), one of the highest in EU28, with its graduate employment averaging 80.5%. Malta, Austria, Germany, The Netherlands, Sweden and the UK are at or above the Education and Training 2020 benchmark. Moreover, employment rates in 2014 for recent graduates in Malta and Germany were approximately twice as high as those recorded in Greece or Italy (Eurostat statistics, 2015). Overall, graduate employment in Malta is rising.

The unemployment rate of Maltese youths (aged 30-34) with a tertiary education, stood at 3% (ETC Statistics, 2015). In the European Higher Education Area (EHEA) countries (Appendix 17), the unemployment rate for youth having a tertiary qualification (ISCED 5-6) was 7.6% in 2015 (European Commission/Eurydice, 2015). Moreover, "Maltese graduates seem to make [a fast] shift from education to employment within 2.6 months" (Employment Index, 2015 p.11). Employers are concerned that there are not enough graduates qualified in relevant fields of study and there are also those who lack particular skills. "...they are lacking in the key *soft skills* and qualities that employers increasingly need in a more customer-focused world" (Archer and Davison, 2008, p.8).

5.3 Employability Discourses

In the context of considerable changes in the labour market and higher education, the discourse of employability has taken centre stage. Universities are urged to produce 'employable' graduates (and not employees). The ongoing liberalisation of higher education has caused an extensive shift in the definition of employability. Skills have become the focus of graduate employability and the terms are promoted in higher education policy and practice.

Accordingly, the University of Malta is under pressure to equip graduates with more than the academic skills traditionally presented by a subject discipline and a degree. Private organisations urge it to develop the 'key', 'core' 'transferable,' 'generic' or 'non-technical' skills needed in many types of high-level employment. *"We really need to invest in their [student] personal development"* (PRA01). It tends to be assumed that the different terms are "synonymous and that the emphasis on skills is a matter of common sense" (Murphy and Otter, 1999, p.16).

While a 'job for life' is becoming extinct, employability skills have become imperative. This is not specific to higher education or to Malta. One of the four 'pillars' of the EES is 'employability.' Graduate employability is high on governments' agenda, because it is perceived that enhancing qualifications and skills of the workforce is a way to increase prosperity and wealth. It is considered "part of a wider strategy to extend the skill base" (Moreau and Leathwood, 2006, p.307).

Universities are urged to create:

> "for each programme on offer, a 'programme specification' which … gives the intended outcomes of the programme in terms of the knowledge and understanding that a student will be expected to have upon completion and, the key skills, cognitive skills and subject specific skills" (National Committee of Enquiry into Higher Education, 2003 par 9.52, cited by Moreau and Leathwood, 2006, p.308).

This is a challenge, because degrees oriented towards specialism are still considered the key to employability. The role of generic competencies in a degree, rather than direct subject knowledge, is heavily debated by HEIs. However, educational institutions have taken advantage of the link to employment opportunities and are promoting this aspect of their 'product.' In fact, institutional branding forms part of students' career prospects. Moreover, it is suggested that HEIs should map employability skills within subject-specific curricula. However, employability skills assessments do not yet feature on degree transcripts, as evidence for prospective employers. Some employers give importance to skills such as communication and teamwork, since:

> "formal credentials are less reliable guides to success in the adaptable organisations of post-industrial society … personal qualities are more important than professional discipline, possession of specific credentials, mastery of specialised knowledge or even of expert skills" (Scott, 1995, p.112).

Many of the accountancy, pharmachem and ICT employers who were interviewed, shifted from seeking entry credentials to critical skills, as the former do not necessarily reflect the actual skills required to carry out the job. These are the critical

and generic skills students learn through experience in attending university - the so-called hidden or latent curriculum.

While it is assumed that in educational and employment contexts, the term *'skill'* has the same meaning; the language used by employers and academics is different. Nevertheless, the language of business has increasingly filtered into universities, because of the increased complexity, specialisation, commitment and responsibilities concerning funders. *"Employers describe the graduates they want as team players who are communicative, demonstrate leadership and are entrepreneurial"* (PRA10). A decision to employ someone may be based on prior categorisations, subjective interpretations or *gut* feeling. Employer assessments of an individual's skills may therefore vary considerably.

The term '*employability*' signals a shift in discourse that draws on explanatory frameworks of employment and different constructions of the graduate. Graduates are encouraged to take responsibility for their employment/employability and "upgrading such *perishable goods* through lifelong learning" (Garsten and Jacobsson, 2004, p.2).

Advocates of employability view a skilled individual as being empowered. "If organisations depend on the knowledge and skills of the workforce, then power rests with those that have the knowledge, skills and insights that companies want" (Michaels et al., 2001, cited by Brown, 2003, p.108). The rhetoric of the knowledge economy may have led to the belief that there are more opportunities than before, and that better credentials are viewed as "the currency of opportunity" (Brown et al., 2003, p.142), leading to good jobs and higher rewards.

"Education has been totally commoditised and rendered into more certification rather than a holistic education" (HEI01). Once a community of scholars, the university is becoming a 'certification factory' to the extent that society now expects and demands that many of its members should be graduates. *"It is a cultural expectation that students must read for a degree in Malta by hook or by crook. If they do not enrol on any University course, they are perceived differently"* (GOV02).

The increased demand for higher education has caused massification of students entering the University of Malta, which expanded by 61.4% between 1995 and 2014 (NCFHE Statistics, 2013-2014, p.25). It has also become an institution more open to

non-traditional students (older than 24 years) offering adult education, evening courses, seminars and MBAs. There are many different types of certification ranging from diplomas to refresher courses through to on-line courses. The University is trying to *"be everything to everyone which may lead to disappointing key actors as there are many expectations which cannot all be satisfied"* (HEI13).

The University's success is gauged by the number of many students annually enrolled and graduating. Rising enrolment increased the number of graduates competing in the global knowledge economy. An increase in tertiary students does not imply better critical skills or an increase in social mobility (Walker, 2014, p.1) but the students' ability to be properly socialised and employable.

These developments have spawned "new forms of relationship between the University and the State that funds it" (Boden and Nedeva, 2010, p.37). In the 1970s Maltese higher education institutions were to "adequately respond to the needs of the nation, open to all sections of the community independently of the financial or social standing, giving a real, not apparent contribution to the cultural life of the country" (Minerva, 1981, p.147).

The Government exerted pressure on the University to offer courses aligned to the job market and as a consequence, certain programmes such as Arts and Science were discontinued. In the ESCO08 code of employees in the labour market (Appendix 17), the job title 'scientist' does not feature. Job titles such as 'technician,' 'programmer,' 'laboratory analyst' do exist and it was deemed that the country needed qualified people for such posts.

This myopic view was based on the erroneous assumption that only lower level jobs were required to service the needs of various Government entities. Cumulatively, it led to insufficient human resources at higher levels, especially in the sciences. Today, the system is more liberal and flexible. Some courses, such as medicine, dentistry, physiotherapy have a *numerus clausus*. "*This is institution driven. From time to time, Government brings in incentives to increase student enrolments*" (Prime Minister).

Debates about student stipends were closely connected to the concern about accessibility. Stipends were defended as a means of ensuring this accessibility to students from all socioeconomic backgrounds. That is, the educational reform

attempted "to provide access, within a 'meritocratic' framework" (Mayo, 2013, p.16). The stipends policy shifted from a social to an educational grant in the late 1980s, when the pedagogical focus shifted again to academic learning, rather than exposure to the labour market. The students spent eight months at the University and three months in 'employment' [excluding August]. They were paid monthly, per academic year of their undergraduate degree.

The stipends policy evolved. In 2014, new regulations permitted stipends even to those students who repeated an academic year. This is viewed by Government *"as an incentive driven control mechanism"* (Prime Minister). *"It doesn't make a difference when they finish their tertiary education but if they finish it"* (GOV09). Stipends now seem to have reverted to a social grant. *"I would not see it as a social policy because it is not linked to a means test. Students cannot keep failing year in year out. The University has a control mechanism for this"* (GOV09). Although stipends seem to perpetuate habits of dependence, students increasingly seek employment during their studies. Some employers, for example, accountancy firms and catering establishments, have flexible working conditions to suit students' educational commitments. Evening and part-time University courses encourage individuals, such as working women, to pursue their studies. This flexibility has made the University more attractive. Against that,

> "the higher education institutions have had to cater for growing student populations without an increase in funding. As a result, a success story of policy brings in its wake significant threats and challenges to the institutions concerned" (The State Higher Education Funding Report, 2004, p.21).

Could the State continue as the sole provider of finance? In 2005, the Government introduced 'tilting' as recommended by the State Higher Education Funding Report 2004 (also known as the Chalmers Report). This implied that students would be encouraged to attend courses perceived to be economically beneficial, by imposing 'modest' limitations on admission to certain courses. Stipends policy reform, i.e. 'tilting', was applied to several science and technology courses.[28] *"This qualified us*

[28]A low percentage of young people (20-29 years) attend science and technology courses in Malta (6 per 1,000 persons in the age group, compared with 13.9 for the EU (Eurostat 2014).

as the State exerting some sort of influence" (Prime Minister). The decision to influence student enrolment in specific courses is industry and strategy driven. *"If the Government is aware that there is a need, for example, of paramedical staff in two years' time, public statements would create an awareness and orientation towards these courses"* (Prime Minister).

When interviewed, the Prime Minister stated that *"We find the University too conservative. We are asking the University to look at the real world and acknowledge that business is changing on a regular basis and rapidly.* It is today being viewed as thriving in competition. *"I believe* [the University] *should not be a monopoly"* (Prime Minister). Furthermore, he argued that *"The University should be more of a research-based institution. If there are other institutions who can take the burden off the teaching function from the University, so much the better"* (Prime Minister). In contrast, the Rector stated that *"we deal with a bigger reality. The mission of the University is to create citizens of the world. We are in the business of forming minds and not creating employees"* (HEI02). Today we talk about the third generation university undertaking teaching (in whatever form it may take), research and innovation. The third pillar comprises outreach and entrepreneurship (Appendix 17). Start-up companies and intellectual property are being turned into value and monetisation. *"Those Universities that wish to be at the forefront of this evolution need to satisfy these three pillars"* (HEI01).

5.4 Institutional actors interpreting, influencing and responding to skills availability

Employability is relevant to each of the institutional actors identified in this study, namely, the Maltese Government, HEIs, professional associations and private employers. Institutional actors comprise: policy initiators and makers; executive agencies; regulators; professional and industry associations; trade unions, providers of private and public services and private employers (employing accountancy, pharmachem and ICT graduates (Table 15).

Table 15: Categories of institutional actors[29]

	Categories	Institutional Actors
Government	Policy makers	• Cabinet Ministers and Permanent Secretaries for Education and Employment, Finance, Health.
	Executive agencies	• Employment and Training Corporation (ETC) (now called Jobsplus) • Malta Enterprise (ME) • National Statistics Office (NSO) • Directorate of Pharmaceutical Affairs (DPA)
	Regulators	• National Commission for Further and Higher Education (NCFHE) • Malta Financial Services Authority (MFSA) • Medicines Authority (MA) • Malta Information Technology Agency (MITA) • Accountancy Board
Higher Education Institution	Delivery of public education services	*Public Higher Education providers* • University of Malta • MCAST • Institute of Tourism Studies (ITS) • eSkills (Malta) Foundation
Private Employers	Private employers	• ***Accountancy*** • PWC, KPMG, Deloitte, Ernst and Young • ***Pharmachem Industries*** • Trading partners: Actavis Ltd, Siegfried Generics (Malta) Ltd, Starpharma, Aurobindo Pharma Ltd, Pharmadox Health Care Ltd, ASG Pharma Ltd • APIs:Sterling Chemical (Malta) Limited, Dipharma (Amino Chemicals) Ltd • ***ICT companies*** • Accent Software Ltd, Exigy Ltd, KPMG Crimsonwing (Malta), Loqus Ltd, 6PM Holdings plc, RS2 Software plc, Computime Ltd, Computer Solutions Ltd, MITA
Industry and Professional Associations, Education and Training Providers	Private Education and training providers	*Private Higher Education providers:(by licence category: extracte from NCFHE 2013/4 p.16)* • BPP Professional Education Malta Ltd; • Richard Clarke Academy (RCA); • Society Education (Gozo); • Institute of Financial Services (IFS); • PWC Academy; • Domain Academy; • Institute of Computer Education (ICE); • Middlesex University Malta; • St. Martin's Institute of Higher Education; • STC Training
	Industry associations	• Malta Chamber of Commerce, Enterprise and Industry (MCCEI) • Malta Employers Association (MEA)
	Professional associations	• Malta Institute of Accountants (MIA) • Chamber of Pharmacists
	Trade Unions	• Confederation of Malta Trade Unions (CMTU) • General Retailers and Traders Union (GRTU) • *Unjoni Haddiema Maghqudin* (UHM) • General Workers' Union (GWU)

Source: researcher's compilation and design, 2016

[29] A description of the key institutional actors can be found in Appendix 17.

Each institutional actor has its own set of narratives, justifying whether or not new measures should be taken to enhance employability skills. In the national context of Malta, this section explores the question:

In what manner do institutional actors interpret, influence and respond to the available type of employability skills needed to match market demand?

The relationships between institutional actors are shown in Figure 14.

Figure 14: Relationships between Institutional Actors

Institutional Actors – their interpretation of, influence on and response to employability skills **Government; Higher Educational Institutions; Professional Associations; Private Employers**		
In which manner do institutional actors *interpret* the available type of employability skills needed to match market demand? ***To interpret*– to decide; to give meaning to**	In which manner do institutional actors ***influence*** the available type of employability skills needed to match market demand? ***To influence***– to have an effect upon	In which manner do institutional actors ***respond to*** the available type of employability skills needed to match market demand? ***To respond to***– to answer, to act
Government **Policy Initiators and Makers** • Assessing EU legislation and regulations, which in turn create the need for specific skills • Interpreting statistical data related to educational attainment and employment	**Government** **Policy Initiators and Makers** • Preparing white papers on employability skills for policy making • Creating 'think tanks' • Programming and allocating funding	**Government** **Policy Initiators and Makers** responded by setting up **Regulators** and implementing policies through **Executive Agencies** • Scholarships offered through the MEDE[30] **Higher Education Regulator - NCFHE** • Setting up of the National Commission for Further and Higher Education (NCFHE). **Other relevant regulators[31]** • Malta Financial Services Authority (MFSA); Medicines Authority (MA); Malta Information Technology Agency (MITA) **Executive Agencies – ETC, National Statistics Office (NSO)** • Matching job seekers to employment opportunities in the labour market through the assistance of ETC *(now called JobsPlus)* • Launching schemes and incentives through JobsPlus and ME, e.g. apprenticeships, traineeships, tax credits for training courses (*Get Qualified scheme*)

[30]Scholarships include the Malta Government Scholarship Scheme Undergraduate (MGUSS-UG); Malta Government Scholarship Scheme Postgraduate MGSS-PG); Master it!; Strategic Educational Pathways Scholarship Scheme (STEPS); Malta Arts Scholarship; Malta Sports Scholarship; Malta Science Scholarship, Scholarship to Achieve Results in ICT and Financial Services (S.T.A.R. Scholarship); Endeavour Scholarship Scheme; 'Reach High' Post-Doctoral Grants and the Commonwealth scholarships.
Available from http://education.gov.mt/en/education/myScholarship/Pages/default.aspx [Accessed 25/03/2016].
[31]These regulators are pertaining to each of the three case studies.

To interpret by	*To influence by*	*To respond by*
Higher Education Institutions **Delivery of public and private services** • Dialoguing and collaborating with industry • Carrying out research	**Higher Education Institutions** **Delivery of public and private services** • Creating forum groups for discussions and feedback • Inviting guest speakers and lecturers from industry to deliver sessions	**Higher Education Institutions** **Delivery of public and private services** • Updating their courses via APQRU • Introducing academic courses relevant to the labour market • Embedding employability skills in the courses
Industry and Professional Associations **Professional and Industry** • Identifying and interpreting what skills are needed by investors	**Industry and Professional Associations** **Professional and Industry** • Preparing Associations' position papers • Collaborating with stakeholders • Union lobbying	**Industry and Professional Associations** **Professional and Industry** • Unions putting pressure on private employers to train their staff members via collective agreements • Education providers[32] – selling educational courses • Encouraging learning and disseminating updates via their membership
Private Employers **Beneficiaries** • Viewing/reporting skill needs within the labour market, e.g. online gaming, financial services, software programming • Viewing shortage of skills and skills gaps	**Private Employers** **Beneficiaries** • Demanding proposals for changes, inclusions or improvements in curricula	**Private Employers** **Beneficiaries** • Offering student placements, internships, project based teamwork, job exposure, job shadowing

Source: researcher's analysis, compilation and design, 2016

[32] Education providers include AIM Professional Academy Ltd, Richard Clarke Academy, Society Education, Chamber of Pharmacists and ICT private companies that award vendor certification.

The Government, as policy initiator and policy maker interprets statistical data related to educational attainment and employment. It also monitors EU legislation and regulations which, of their nature, give rise to the need for specific skills. It seeks to influence other institutional actors by preparing white papers, creating '*think tanks*' and programming and allocating funds. Policy documents that affect further and higher education in Malta include: the Framework for the Education Strategy for Malta 2015-2024 (MEDE, 2014), Higher Education Strategy (NCFHE, 2014), A national vocational education and training (VET) policy (MEDE, 2015); A national employment policy (MEDE, 2014) and the Economic vision for Malta 2014-2020 (MCCEI, 2014). Finally, the Government responds to the availability of employability skills by, for example, establishing executive agencies and/or regulators (Table 15).

Certain constraints characterise the local institutional framework. A recurrent, shared concern of policy-makers in education and employment is skills gaps in the labour market, as they greatly affect competitive advantage. They arise because of "changing job requirements, labour supply fluctuations, educational institutions not addressing the needs of industry and the lack of business investment in the workforce" (NCHE, 2009, p.12).

Empirical studies on graduate skills gaps in the Maltese labour market are not available. Market failures affect skills acquisition and call for corrective, evidence-based public policies. The justification for government intervention in the graduate labour market is that this constitutes investment that enhances the quality of human capital (OECD, 2001; Boden and Nedeva, 2010).

Malta seems to lack a collective commitment to a culture of skills upgrading, as *"profits in many sectors of the economy can still be made through low skills, low waged work"* (PHR02). The State's response has been to adopt a supply–side labour market strategy, expanding higher education on the assumption that a skilled labour force will drive up demand for skills.

> "There is a common belief that it is practically, politically and financially hard for governments to shape labour demand in firms and supply-side intervention [which is] not just desirable but also feasible" (Warhurst, 2008, p.72).

"*Acting through Malta Enterprise (ME), the Government takes on an enabling role and responds to market needs as flexibly and as fast as possible - a competitive advantage that helps to attract external investment"* (GOV10). For this part, MEDE considers a:

> "high quality undergraduate education of central importance to a more skilled workforce and the development of new fields of study and specialisation. This is key to Malta's economic and social progress" (MGUS, 2016, p.10).

The Government's response to enhancing undergraduate students' skills is by extending financial support – scholarships. Students from the University, MCAST and those Maltese students reading for an MQF Level 6 qualification with other education providers, are eligible to apply. This response dates back to the sixties, when university fees were abolished, and was extended through the worker student scheme, being an ongoing theme in public policy.

The State Higher Education Funding Report (2004, p.37) highlighted that various education institutions were "operating in their own orbit with little evidence of strategic coordination between them." In response to this, the Government set up the NCHE "to consult and advise the Minister for Education, to engage in a structured dialogue with all institutions and to inform the public on issues relating to sustainable development of further and higher education to meet the needs of society" (Education Act, 1988, Cap. 327) (Appendix 17).

NCHE's strategic response was not only to create synergies between education, business and government development agencies, also but to carry out research, provide better statistics, financial audits and other reports of all further and higher education institutions. The Malta Qualifications Council (MQC) was legally established in 2005 to align the national qualifications framework (NQF) to the European Qualifications Framework. The NQF focuses on learning outcomes defined in terms of knowledge, skills and competencies. The NCHE and the MQC merged into one agency to form the National Commission for Further and Higher Education (NCFHE). NCFHE's role is not only to publish "the national strategy and key performance indicators for further and higher education" (NCFHE, 2006, p.6). It

has a regulatory role, entailing responsibility for quality assurance,[33] along with accreditation and licensing of all public and private further and higher education programmes and institutions (EURYDICE, 2009/10).

Education providers are interested in the quality of learning programmes and students. An HEI is not a factory of workers.

> "An educational system is meant to provide a steady supply of flexible and opportunist generalists who are willing to sharpen or resharpen… a skill in line with perceived labour market opportunities" (Baldacchino, 1999b, p.14).

A graduate should be able to retool once out in the labour market. The extent of retooling may depend on the skills gap, namely, actual skills base and the one required. A large gap may imply that the individual's ability to retool is insufficient. The University addresses skills gaps with measures such as course top-ups, foundation, refresher and postgraduate courses and MA qualifying years.

Dialogue with industry facilitates HEIs' interpretation of the work-relevant competencies and skills that employers want and makes the students "more employable, fosters entrepreneurial attitudes and mind sets among them, increases the flow of knowledge across sectors and stimulates the development of new networks" (Thune, 2011, p.34). Skills acquired must also be transferable across contexts to facilitate graduate mobility.

Elsewhere, collaboration between HEIs and business organisations takes place through "informal agreements between firms and individual academics with some formal agreements running in parallel, connected to research and education" (Thune, 2011, p.33). In Malta, some industries, faculties and academic departments have had close ties for a long time, while for others such interactions are infrequent or even non-existent. Interaction across different sectors is generally based on industrial specialisations.

Collaboration takes place in many different ways as the institutional actors are likely to have different goals. The patterns of interaction and collaboration are complex

[33]In 2015, the first external audits were conducted among the main public further and higher education institutions.

and involve many closely related activities, such as consultancy services, staff mobility, commercialisations and events directed towards students. HEIs' response to collaborations with industry are in the form of revision of existing programmes, focusing on course structure and curriculum issues, which are approved by the University of Malta's PVC and administratively supported by the APQRU (Appendix 17). Collaboration between companies and University departments focus on the involvement of firms in teaching, thesis advice and internships within educational programmes, sponsorships, use of firm equipment or real-life business cases. Further collaboration involving industry or professional associations includes the transfer between study and work life, such as careers fairs, mentoring and trainee programmes. Collaborative relationships focus on different activities and lead to different results both in the short and long term. Companies that collaborate with HEIs can easily source potential candidates.

In 2014, MCAST introduced a two year apprenticeship scheme as an applied component in course offerings for VET students. MCAST provides courses ranging from level 4 to level 6, where students have an obligation to work in a particular enterprise, having been given a certain type of *'sheltering'* package. Students are monitored and continually assessed. *"The students develop their own portfolios in a way which is more practical than universities have traditionally been"* (HEI04).

Public and private employers face the challenge of remaining relevant and competitive in a fast changing economic scenario by interpreting, discovering and creating new knowledge to enable development of valuable products, processes and services. They demand that students are equipped with knowledge, skills and attitudes commensurate with the work that a dynamic economy generates.

Employing organisations that set "employment conditions and educational qualifications required for them" (Oxenham, 1988, cited by Sultana, 1997, p.38) are different and have distinctive demands and spheres of influence. Large, small and medium enterprises have different expectations of graduates as do locally owned and foreign owned companies (Deguara, 1997). The public sector is Malta's largest employer (46,700 in 2004 to 40,900 in 2012 NSO, 2012; 2013) and many private employers subsist on State contracts. Foreign-owned employers in industry and

manufacturing bring their companies to Malta for reasons of wage levels, a hardworking labour force and proximity to policy makers.

Small and medium enterprises rely on the MEA to represent them with educational institutions. They are generally unaware of educational goals, curriculum content or the importance of formal assessment outcomes. Recruitment is generally informal; instead of considering credentials and sophisticated methods of testing, they "rely on interviews, references and networks" (Zahra and Ebejer, 1992, p.87).

Larger national and international organisations have more resources to influence educational policies by informally sharing their agendas with educational institutions and suggesting inclusions or amendments to curricula. However, there are no established fora for cross-fertilisation of ideas and influence. Likewise, University specialists have similar concerns that they are not represented on some councils or boards which have educational aims or objectives.

The employers' collective voice is represented by industry and professional associations. These associations have nominees on certain official committees with the purpose of "keeping each other informed on the developments taking place so that the education system produces that which the country needs most" (Mifsud, 1996, cited by Sultana, 2006, p.24). There is evidence that the MCCEI and the MEA have influenced educational policy by presenting position papers, interpreting the employability agenda such as the national employment strategy, work exposure schemes and Jobsplus initiatives. For example, *"the change in trends and the reports I receive is that learning languages seems to be a priority… These skills gaps are the core set of skills rather than a specialisation"* (Prime Minister). Employers identified a command of selected foreign languages as a significant skills gap. There is a drive to include Spanish, Mandarin and Arabic as subject options at the University and in some schools. *"We need to encourage more students to learn Spanish which is the third most spoken language in the world as I think it would open new frontiers"* (Prime Minister).

5.5 Skills regime

Whether formal and planned, or informal and unplanned, the interaction of institutional players creates or moulds a skills regime which determines the character of educational and training programmes. Governments create institutional

frameworks for education systems, industrial relations and labour markets; employers and unions have to adapt their preferences accordingly in the short term.

The rationale of Malta's skill training system is more similar to the UK's, therefore being more voluntarist[34] (for example, the use of the English language and clauses that exist in Maltese labour law). This rationale implies an underlying value system, the UK's being laissez-faire. It is less top-down, whereas for example, the German system is more structured and co-ordinated, involving social corporatism simultaneously at industry and national level.

Overall, Malta has a certain degree of hybridity, encouraging flexibility and adaptability so as continue to be competitive. The World Economic Forum ranks Malta 21st out of 138 countries in regard to economic environment, but highlights the lack of skilled workers (Times of Malta, 28 September, 2016). The combination of a focus on a knowledge-driven economy and volatile markets has increased the demand for high-skilled workers, and shifted attention to employability and lifelong learning. National responses to skills formation and policy implementation are also changing. "The historical, [institutional, cultural, political and economic] development of nation states remains vital to understanding national strategies for a high skills economy" (Brown et al., 2001, p.53). In Malta, it seems that high skills strategies have involved both the modification of existing institutional arrangements (path dependent) and transformations of educational processes.

European developments have affected Maltese institutions having responsibility for skill formation, namely, the University, MCAST and ITS. The Bologna process has induced reforms by creating the EHEA based on international cooperation and academic exchange. Member states (and non-member states) have adopted guidelines "to strengthen cooperation in VET in order to promote mobility across national labour markets and to enhance the competitiveness of the European Union" (Powell and Trampusch cited by Busmeyer and Trumpusch, 2012, p.285).

The EQF and ECVET were introduced in 2007 and 2009 respectively. These instruments develop common descriptors and standardised assessments of qualifications that can be applied to all educational systems. They focus on learning

[34]'Voluntarism' is the belief that the state, government, and the law should not interfere with the procedures of collective bargaining and of trade union organisation.

outcomes. These initiatives acknowledge national specificities in higher education and vocational education training systems, providing standardised definitions and measurement regarding qualifications. Malta has been at the forefront in implementing European reforms.

These EU initiatives "promote not only the increase of permeability between general, vocational and higher education but also modularisation and standardisation" (Powell and Trampusch, 2012, cited by Busemeyer and Trampusch, p.285). Students can transfer credits from one institution or programme to another locally or overseas. They can steadily accumulate credits and know that they are progressing towards full qualifications. From an educational point of view, modularisation has led to over-examination. Too many examinations are set to discriminate between strong and weaker students as well as to test that they have reached a threshold level of competence, i.e., they are not used formatively. It is also argued that modularisation "encourages pigeon-holing of knowledge and actively discourages the transfer of ideas from one area of the discipline to another" (Goodhew, 2002, p.22).

The European credit transfer and accumulation system (Appendix 17) also enables education and training providers to match their qualifications to the level descriptors of the MQC. These descriptors reflect the country's political, economic, cultural and social priorities. Many education and training providers in Malta have applied to have their academic and short courses level rated and credit-weighted.

Programmes of study offered in Malta outline the knowledge, skills and competences expected to provide the content of qualifications, among them vocational qualifications, aligned to the MQF and referenced to the EQF and the QF/EHEA. This implies that *"higher education institutions [should] provide students not only with adequate technical knowledge in their field, but also the [skill] abilities and competencies to carry out work"* (HEI02).

5.6 Skills Gaps

Notwithstanding the emergence of the foregoing skills regime, endemic skills gaps constrain companies' ability to grow, innovate, deliver products and services on time, meet quality standards, environmental and social requirements where they

operate (Aring, 2012, p.1). When skills gaps are addressed, this impacts positively on productivity, employment and enterprise creation. Employers' concerns regarding graduates' skills and the difficulty of filling vacant positions arise from a) skills shortages – not enough graduates at a particular level of education or in the right field of study and b) skills gaps – they lack the skills to fill the position. Employers have told the Minister for Education and Employment "we would employ more people if only we could find them. They cannot expand with the current status quo; others have decided to look abroad and, at a hefty cost, tried to lure people to Malta" (Times of Malta, 4 May, 2014).

"The misalignment between education and employment is aggravated as new technologies continue to shift skill requirements..." (Aring, 2012, p.2). The gaps emanate from the fact that *"the industrial environment is very dynamic and skills requirements and job content change"* (EMP01). *"I think it is an illusion that the State can plan what skills we need for the next ten years. Today's world is continually changing and it is a challenge we have to live with and has to do with continual adaptation"* (Prime Minister). Skills gaps are part of the economic transformation process, *"a sign of a vibrant and evolving economy*" (HEI01), a point explored in the case studies.

Employers note the absence of employability skills that are practical and relevant. Graduates lack the application of theory, which implies that they are unfamiliar with business practice or have not assimilated theoretical concepts. This deficiency seems to be more pronounced in disciplines such as the social sciences and to a lesser extent in technological fields of study. *"During the hiring process, employers scarcely take grades into account and consider a degree qualification as a requisite for a job application"* (ACC02). However, employers give importance to students' preparation in competencies and skills and "it would seem logical that the University system assesses students based on the degree to which they obtain certain abilities and skills and not only on the content of the subjects studied" (Hernandez-March et al., 2009, p.13).

Employers in certain sectors prefer to employ MCAST students, because of their immediate response and work readiness. However, other employers prefer graduates for the long term. If an employer offers jobs that require certain type of mechanical, electronic, routine-based activities and fixed hours, an MCAST graduate tends to be

better suited. For innovating companies, employees need to be flexible, forward looking and able to think out of the box. *"A University graduate is perceived to be better prepared for this line of work"* (ACC07).

"Employers have expressed their desire through the MEA that research is developed in an effort to ensure enhanced effective allocation of education expenditure and channel human resources in areas where they are most required" (ETC, 2015, p.6). "*The Employability Index also serves as a guidance tool on choices of studies and gives students direction"* (EMP03). It indicates the potential of finding a job within the study route chosen. *"It states the facts and does not predict the future. It is crucial data for a student to take a decision"* (Prime Minister). The index shows that 79.3% of university graduates in 2014 immediately found work in the area they had studied and 6% had higher qualifications than the job requirement they were carrying out. 53.5% of those holding an MCAST certificate or diploma were not working in the area they studied in. Graduates reading for *"a degree had a better chance of finding jobs in their area of study than those who graduated with a certificate or a diploma"* (GOV15).

It is evident that some areas offer better chances of jobs that are related to the field of study than others. The rate of students finding work in their area is high among graduates in ICT, science, pharmacy, accountancy, medicine, engineering, and education. *"Students who choose accountancy, finance or mathematics and statistics are very marketable*" (GOV06). These faculties have substantial numbers of students, largely taking professional courses. However, there are not enough places provided and Malta is experiencing labour shortages particularly in finance, IT and health, where employers are opting to recruit graduates from abroad.

The rate of students finding work in their area of study for those with degrees in the humanities, theology, social policy and European studies is low (ETC, 2015). These Faculties and Institutes seem to be preparing graduates for work in areas that are not entirely related to their qualifications. In 2013, 20% of graduates found a job which did not match their qualifications exactly and about 20% were deemed to be overqualified for the post they obtained, with 12.5% being both mismatched and overqualified (ETC, 2015).

5.7 Conclusion

This chapter analyses the national employability scenario. It traces shifts in the labour market, modifications of the principal skills regime and the emergence of both temporary skill shortages and endemic skills gaps. It is evident that these shifts are closely associated with the fundamental re-orientation of Maltese economic strategy: from a heavily protected manufacturing and public sector base towards a competitive economy incorporated into Europe's Single Market, and increasingly attracting foreign direct investment in high-skill services and high value added products.

Taking its policy cues from pan-European frameworks such as the Bologna and Copenhagen processes, and developing skill formation practices that are a hybrid between UK and German practice for example, Malta greatly expanded access to tertiary education as well as VET. According to the Education and Training Monitor 2015, the employment rate of tertiary graduates (aged 30-34 years) in Malta for the year 2014 (ISCED 5-8) was registered at 91.4%, unlike other countries, such as Italy or Greece.

"The EU Commission has placed Malta in the group of countries which have registered significant improvement, although still not producing enough graduates compared to the rest of the EU" (Times of Malta 5 December, 2015). The average percentage of persons who followed tertiary education in the EU is 37% and the corresponding figure for Malta stands at 27% (EU Statistics, 2015).

Nonetheless, employers are concerned both that there are not enough graduates in particular segments of the labour market, and that certain employability skills are not cultivated, among them communication, team-building and entrepreneurial skills. In the absence of comprehensive labour market and skills development policies, employers either attempt to influence policy makers and educational institutions on a case by case basis, or recruit internationally.

Nonetheless, there is also much evidence of continuity: the State remains the principal source of funding for higher education and VET; the University of Malta and MCAST hold dominant positions in the market for higher and vocational education; the stipend scheme conceived forty-odd years ago remains in force despite doubts about its guiding principles and incremental adjustments to its terms.

It is important to seek employers' views by economic sectors or profiles in order to map out the firm, industry and generic skills (where applicable) that are required in each field. To this end, specific sectors, namely - accountancy, pharmachem industries, information and communication technology will be investigated in the next three chapters.

Chapter 6: Graduate Employability in Malta's Accountancy Sector

"Generic skills are no longer just an 'add on' or a nice to have"
(P. Mamo, PwC, 2014 cited by The Accountant, spring, 2014, p.43).

6.1 Overview and thematic analysis of the case study

This chapter presents the thematic and qualitative findings on how the institutional actors, namely, Government, HEIs, professional associations and employers interpret, influence and respond to skills availability in the accountancy labour market. The business community in Malta is strongly supported by a large array of accounting and auditing practitioners ranging from small boutique practices to the global audit firms. The latter has a significant presence in Malta through associate links with the local firms of long-standing repute. Organisations in this field can be classified into six main categories, namely, the four largest professional services networks in the world,[35] small and medium sized audit firms, sole practitioners along with accountants in industry, in the public sector and in education. The big four firms were selected because they are the dominant players of graduate recruitment in the labour market and provide internationally and recognisable brands. They review their recruitment methodology regularly to attract accountancy graduates.

For the purpose of this case study, fourteen in-depth interviews related to the accountancy field were held with three interlocutors from HEIs, two representing professional associations, the regulator, eight managing partners as well as the human resource managers (where applicable) from Deloitte, Ernst and Young, KPMG and PwC (Appendix 2). The interview questions served as a guide to cover a range of matters associated with the following six topics, namely, 1) general views on the economy, skills, employment of graduates, 2) employability discourses, 3) synergy between institutional actors, 4) the accountancy labour market and employment, 5) skills regime and 6) skills gaps. From these six topics, twelve main themes were extracted that are coherent, consistent and distinctive, which are presented in section 6.4. Interestingly, these themes were similar across the three sectors chosen for this study, namely, accountancy, pharmachem and ICT. These themes are the principal threads in the narrative sections of this case study and the

[35]These are known as the Big Four audit firms offering audit, assurance, tax, consulting, advisory, actuarial, corporate finance and legal services.

concluding section 6.8 presents them graphically as a single canvas as well as analysing the salient features.

This chapter begins by giving the context of the accountancy sector in Malta's small scale economy and the labour market for accountants. The skill demands are discussed and the thematic analysis is facilitated by a better understanding of the overall employability discourses and skills regime as well as the recognition of policy issues and concerns.

This case study also focuses on the expectations of the four institutional actors in the development of the accountants' technical and non-technical skills. An analysis of the type of employability skills and gaps that exist for new graduates in the accountancy field sought by employers are explored. The evidence from this study is that whilst the institutional actors seek graduates with the technical knowledge or are certified to practise, they also emphasise "the acquisition of generic skills to demonstrate the capability to be a competent accountant" (Jones, 2014, p.529). The top three most important and desired non-technical skills that are lacking in accountancy graduates are identified as key to the accountancy profession and these are discussed in section 6.7. The chapter ends with the thematic analysis leading to a conclusion in the accountancy field.

6.2 Context: The accountancy sector in the Maltese economy

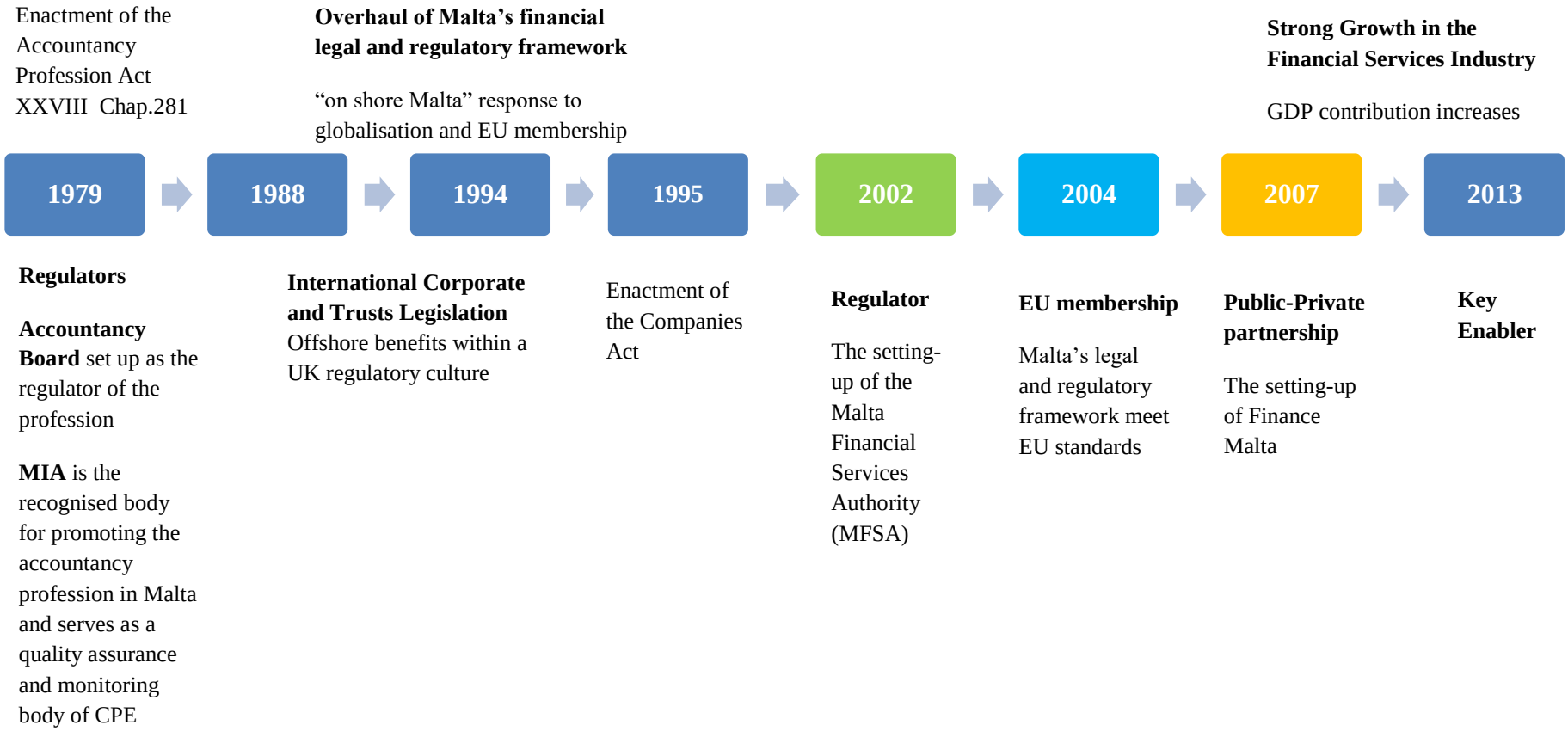
The context and dynamics of the global business environment including the legal and professional requirements, are some of the factors that have radically changed the environment in which the accountant works. That is, nowadays the scope of business is not limited by national boundaries, for there are business opportunities in the global market place.

In the early 1990s, Malta adopted EU financial directives and revised its laws "*to become more audit centric"* (ACC08).

> "The entry of Malta into the European Union in 2004 gave impetus to the island nation's ambition to transform itself from a fringe offshore jurisdiction to a fully-fledge international financial centre" (Robert O'Connor, London Editor, Best week Europe, 2010).

EU membership led to fiscal and business promotional incentives and other advantages including the single passport regime, and forms part of an extensive network of double taxation treaties. Foreign companies have set up in Malta, because of *"the beneficial tax incentives, the climate, English language fluency, a reliable workforce and a stable legal and economic infrastructure"* (ACC03). The stable economy, the soundness of the country's financial system together with the MFSA's efficient, firm but flexible approach, placed Malta on the financial map as a very significant and competitive jurisdiction. It became the jurisdiction of choice, offering a trustworthy alternative to traditional EU financial services for renowned financial businesses who seek to establish themselves in a secure and well-regulated EU domicile. Consequently, Malta's financial centre grew from a domestic to a regional hub (Figure 15). This development is embedded in a timeline that links it to higher education initiatives in the field (Table 16).

Figure 15: Malta's Financial Centre: from domestic to regional



Source: researcher's compilation and design, 2016

Table 16: A Timeline of strategy, policy and higher education initiatives: Accountancy

Year	Time Line
1857	Commercial Code regulated the formation of companies
1942	The establishment of the Malta Institute of Accountants (MIA); 53 MIA members were recognised as book keepers
1948	The accountant's role expanded due to the enactment of the Income Tax Act
1954	The establishment of the Malta Corporation of Accountants
1962	The enactment of the Commercial Partnership Ordinance (CPO)
1965	Statutory recognition of the profession when the CPO came into effect Foreign companies were set up in Malta, e.g. SGS Electronics Merger of the two local bodies into the Malta Institute of Accountants
1967	The first Maltese audit firm was set up in Malta – Norman Spiteri and Company The first professional examinations based on those of the UK accountancy bodies were introduced by the MIA
1977	MIA became a founder member of the International Federation of Accountants (IFAC) and the International Accounting Standards Committee (IASC)
1978	The BA (honours) Accountancy degree was introduced at the University of Malta
1979	Formal recognition of the profession by the enactment of the Accountancy Profession Act (APA) 1979; The Malta Institute of Accountancy (MIA) is the only recognised Accountancy body in Malta under this Act; The Accountancy Board was set up as the regulator of the profession
1989	*The Federation des Experts Comptables Europeens* (FEE) approved MIA as one of its members
1992	General Election
1995	The enactment of the Companies Act 1995 which superseded the CPO; firms had to adhere to the International Accounting Standards (IASs) and the International Standards of Accounting (ISA)
1996	General Election
1998	General Election (Labour Leader and Prime Minister resigns)
2001	Joint Professional Examination scheme with BPP Business section, UK. It is a specialist set of professional external examinations in the areas of accounting, tax, finance, actuarial and short courses as part of continuing professional development
2002	Continuing professional education became mandatory for all qualified accountants
2004	Transposition of EU Directives and regulations
2005	Eighth Directive was enforced to regulate statutory audit; compliance with International Financial Reporting Standards (IFRS); There was a shift from self-regulation to regulation
2009	IFRSs as adopted by the EU; the establishment of General Accounting Principles for Smaller Entities (GAPSE)

2013	General Election
2015	The Bachelor of Accountancy (honours) degree was upgraded to the Masters in Accountancy (honours)

Source: researcher's compilation and design, 2016

With legislation in place:

> *"Malta began to attract banks and insurance companies and the country began to prosper. All the firms recognised that Malta was growing in a space where big companies, not only those in financial services but also in other connected businesses, would set up in Malta. This is where we [Malta] needed to up the game"* (ACC07).

The international standards of auditing (ISAs) were incorporated into Maltese law and they became the national auditing framework. Clients not only requested auditing services, but other requirements, such as feasibility studies. Audit and accountancy firms benefited and received spin-offs for advisory services as well. This resulted in changes in the skill sets required by accountants, seeking to add value for their clients. There are "implications for accountants to be knowledge professionals helping to drive businesses forward" (Jackling and De Lange, 2009, p.369).

The Accountancy profession in Malta has been a fast growing one. It was formally recognised in 1979 with the enactment of the Accountancy Profession Act XXVIII (APA) CAP. 281. There has been a shift from the traditional accounting (book-keeping) to a more 'knowledge services' profession focusing on data interpretation as opposed to data compilation. The largest audit firms expanded their services beyond the traditional work of audit and tax by offering management consultancy services (Robson et al., 2007). This led to a change in professional identity from a mere auditor to an "added value business advisor" (Robson et al., 2007, p.421). Suddaby et al., 2007 argue that accounting firms have successfully outgrown their profession of origin and talk of a 'global business advisor' identity.

The changing role of the accountant has been studied by various international agencies, examining the newly required skills in the accounting profession. They have critiqued the way in which accountants have been educated. The need for change is based on the deficiencies identified in the skill sets that graduates typically bring to the workplace. Some argue that "the requisite skills required by tomorrow's business leaders will include transferable, technical skills along with generic, professional, ethical and lifelong learning skills" (Jackling and Lange, 2009, p.370). Technical skills are defined as "the operational skills necessary to perform certain work and learning activities" (AQF, 2013, p.6). Generic skills emphasise relevance to graduate outcomes in terms of the world of work and employability (Barrie, 2007). Employers seem to view the mix of skills as necessary as it helps to solve a diversity of business challenges. This study explores the employers' perceptions of the desired skill sets and a number of skill deficiencies of graduates on entering the workplace. *"With the evolution of the role of the accountant and its many facets, the portfolio of skills and attributes that determine professional success has transformed too"* (P. Mamo, Senior Manager PwC, 2014, cited by The Accountant, summer, p.43). This will be further discussed in section 6.6.

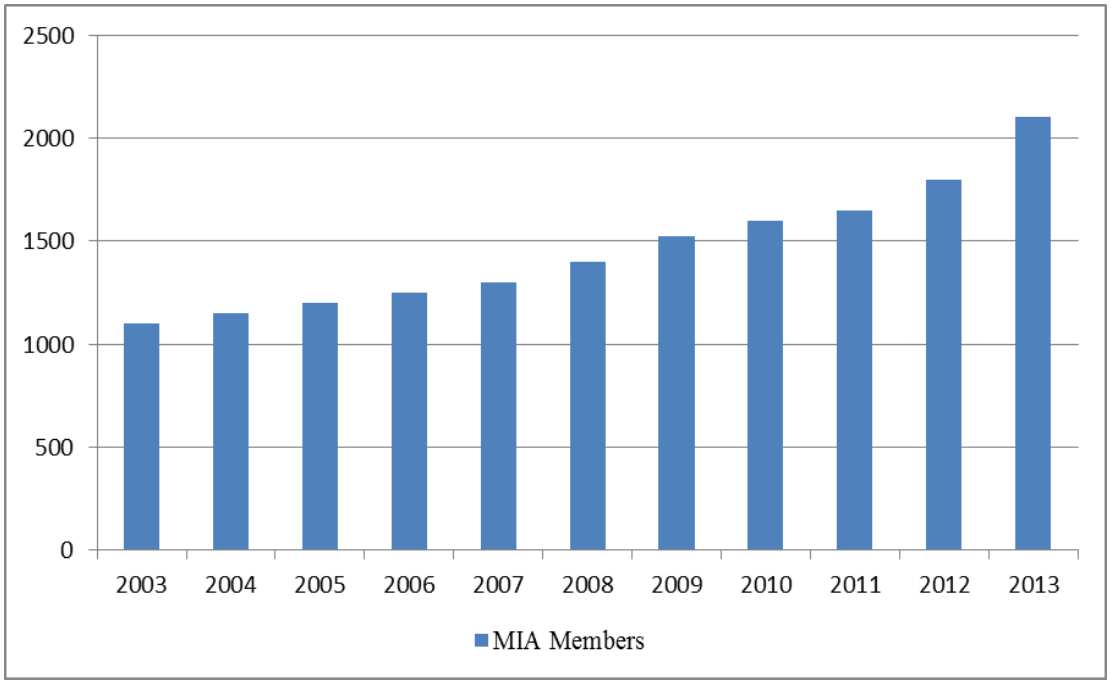
Audit firms source accountancy graduates who have an accounting or auditing role depending on the clients' and firm's requirements. Accountants and auditors both work with the financial statements of a business and ensure they are accurate, up-to-date and in compliance with various regulatory standards. Accountants prepare these financial statements, which include the balance sheet, income statement and statement of cash flows, book-keeping, tracking expenses and revenues, forecasting future profits and cash flows as well as tax preparation. An accountant could be an employee of a company, or might work for a third party hired by businesses to manage their books and prepare their tax returns.

Auditors verify the accountants' work. They examine the financial statements prepared by accountants and ensure they represent the company's financial position accurately. They verify that these financial statements are assembled in accordance with generally accepted accounting principles (GAAP) on an annual basis. Like accountants, an auditor can work internally for a specific company or for a third party, such as a public accounting firm, to audit various businesses. Accounting and

auditing career paths draw from the same talent pool and, for the most part, require similar skill sets. These career paths are viewed interchangeably in this case study.

The new global business models and the digital age have shifted expectations of the work of accountants. IT has had an immense impact on the accountancy profession. In the past, accounting graduates' success was measured by the technical skills acquired in a business role. More recent studies have pointed out that the technical skills are presumed and it is the generic skills that are associated with career success (Hassall et al., 2005). *"Generic skills are no longer just an 'add-on' or nice to have"* (P. Mamo, Senior Manager, PwC, 2014 in The Accountant, spring, p.43). They are essential when working in a variety of different environments with a diverse range of clients and colleagues worldwide. Accountants are a vital business asset and play a key role in commerce, industry and in both large and small organisations (Caruana 2009). "Sustainable development of the accountancy profession is best achieved by the creation of a professional accountancy body…" (IFAC, 2010, p.7). The MIA was set up to promote the accountancy profession and maintains a membership register of qualified accountants. The number of MIA registered and qualified accountants in Malta has increased exponentially from 496 in 1995 to 2,087 in 2013 with a compound growth rate of 8.86% per annum (MIA statistics, 2014) (Figure 16).

Figure 16: Malta Institute of Accountants' (MIA) membership



Source: MIA statistics, 2014

EU membership impacted on the growth of the profession both from the demand and supply sides, as claimed by the interviewees of the big four firms. Some respondents stated that EU membership contributed to the growth of the financial services sector leading to a higher demand for accountants. *"Many practitioners voiced that the University is going to flood the market with accountants and render the profession valueless"* (ACC10). In fact, the opposite happened. Other respondents argued that membership affected the regulation aspect rather than the profession itself. It contributed to "improving the economy and increased regulation and compliance" (Baysden, 2013, p.2). Accrual accounting was introduced, which would contribute to the growth in the public sector in the future, *"because of its move towards EPSAs that would require the need for more accountants"* (GOV05). The evolution of the economy and the development of skills have to move together; the growth of the profession is inevitable (Tysiac, 2014).

6.3 The Labour Market for Accountants

A number of interviewees highlighted difficulties in securing qualified accountants. Accountancy qualifications are viewed favourably by the industry as these resources are flexible in terms of the range of roles and areas across audit, banking, insurance and financial services into which they can be deployed. The perception of these qualified accountants is that they provide an automatic pool of mathematical individuals with a good foundation in business principles and that the demand for their skills exceeds supply.

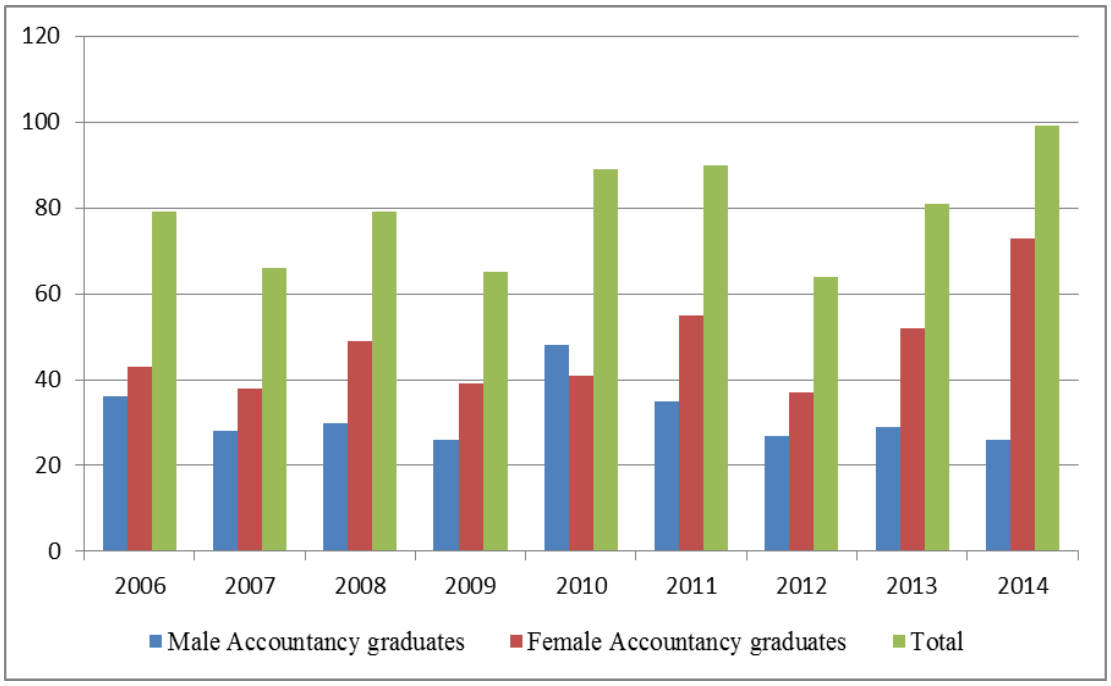
There are three routes that lead to an accountancy qualification (Appendix 18). The Department of Accountancy, offers a Masters in Accountancy (honours) degree (2012 to date)[36], which was upgraded from the B. Accountancy (honours) degree[37], in line with the Bologna process,[38] so as to increase international competitiveness. Accountancy was upgraded to an academic discipline within the University.

> "…Accounting is too important to be relegated to vocational training programmes housed in industry. Rather, the training should be university-housed so we can access the best thinking the University has to offer and make accounting available to students who will train to do accounting's important work" (Fellingham, 2007, p.160).

University students who chose the accountancy stream in their third year as their major degree (Appendix 19) increased from 164 in 2009 to 191 students in 2014 (Accountancy statistics, 2014). These figures contribute to the supply of accountancy graduates in the labour market. In fact, the number of accountancy graduates has steadily increased since 2012.

[36]Available from: http://www.um.edu.mt/fema/overview/PMACCFTT2-2014-5-O [Accessed 10/10/2016].
[37]B.A. (honours) Accountancy was changed to B. Accountancy (honours) degree after 1987.
[38]The Bologna process is designed to ensure comparability in the standards and quality of higher education qualifications.

Figure 17: Number of Accountancy Graduates 2006 - 2014 by Gender



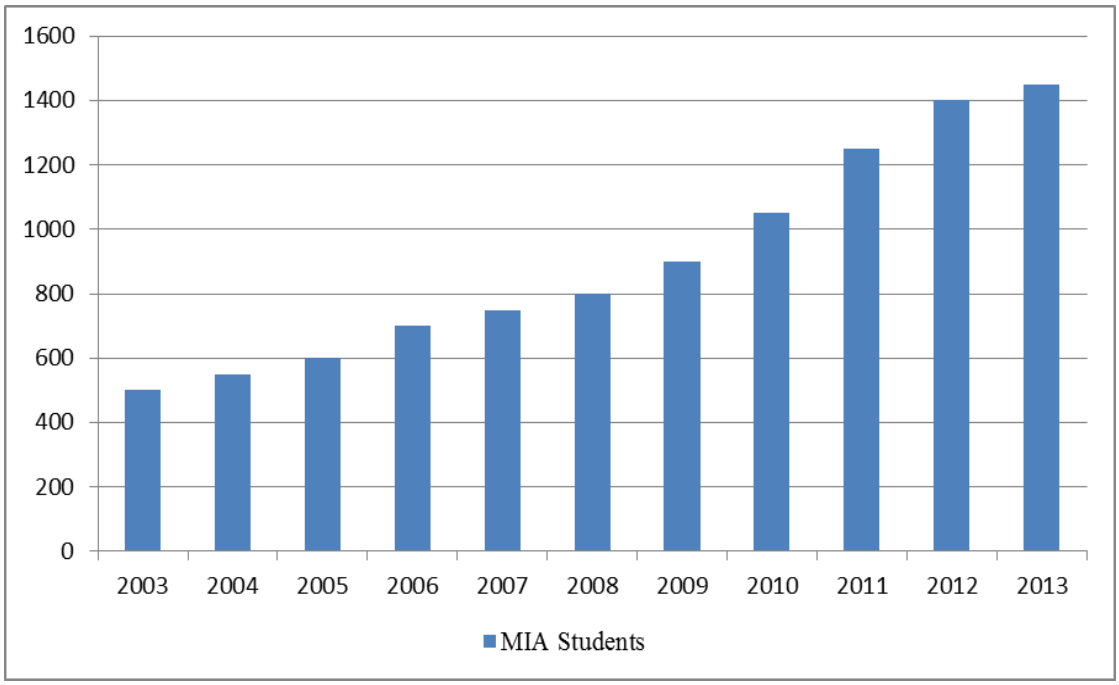
Source: University of Malta Statistics, 2015

Figure 17 shows the number of graduates qualified in B. Accountancy (honours) and M. Accountancy (honours) (years 2012-2014) over the past eight years. There were more women than men becoming accountants, with the exception being in the year 2010. This may have been due to the great financial boom in 2005 and the increases in executive pay which may have contributed to encouraging more women to consider a career in accountancy and eventually graduating in the year 2010. Given the lucrative compensation packages offered in 2005, a career in accountancy would have been considered worth investing in.

There are over a hundred university students enrolled on the accountancy undergraduate course every year. *"We have a five year supply of future accountants and a shortage of about five hundred qualified accountants in the labour market."* (HEI08). *"The lack of resources is the biggest concern. Give us people with reasonable brains and we can train and bring them up to a point where they are adding value"* (ACC05).

The second and third route namely, ACCA and ACA leads to accountancy professional qualifications. They are UK qualifications, recognised by the Accountancy Board for registration as a certified public accountant (CPA) in terms of Maltese law. There are a number of education and training providers which offer these professional and portable qualifications. ACCA/ACA student enrolment has increased from 259 in 1995 to 1,558 in 2013, with a compound rate of 10.48% per annum (MIA statistics, 2014). These statistics are illustrated in Figure 18.

Figure 18: ACCA and ACA Student enrolment on courses offered by education and training providers



Source: MIA Statistics, 2014

All active ACCA and ACA students may obtain their qualification within a ten year span, but *"the big four firms have introduced a policy to encourage their employees to complete their part-time studies within five or six years"* (ACC02). It is difficult to pre-determine in which years students become fully qualified accountants since the structures of the ACCA and ACA courses are different from those offered by the University. Students choose when to sit for these exams while they are working. According to the big four's transparency reports for 2015, PwC employed 74

graduates, whereas Deloitte and KPMG employed 78 and 54 new hires, respectively. Data for EY were not available.

These routes to the accountancy qualification are widely accepted in Malta, complemented by summer work placements. The majority of accountancy students are offered opportunities to work with the big four firms and are given formal contracts of employment with the prospects of full time employment on graduation. This was a way of ensuring an ongoing pipeline of auditors. *"I remember being very active, going to University and offering contracts to students as all the firms at the time did, way before they [the students] completed their mainstream studies"* (ACC08). Early student recruitment still takes place and students are socialised into being competent accountants during their placement. These trainees learn the discipline of charging for time, the importance of serving the client and the necessity of appearing professional at all times. Great effort goes into ensuring that the 'student employees' learn what is expected of them. ACCA and ACA sponsored students are also offered full time employment opportunities during and on successful course completion of their courses. This is discussed further in section 6.6.

6.4 Skills demands and employability discourses

Increased Demand

Competition among the internationally reputable big four firms has intensified over the years with rigorous promotional campaigns on campus offering fringe benefits. Students are increasingly being approached at earlier stages in their studies and firms compete for the best accountancy students offering attractive contracts of employment. This demand was confirmed during the interviews with the big four firm representatives. As one partner pointed out: *"it is not an employers' market anymore but an employees' market"* (ACC03). The pool of graduates is limited and each firm has resorted to finding different ways of trying to attract future accountancy graduates. As a result, *"they have become aggressive in terms of what is being offered to new recruits"* (ACC02). Interviewees reported that they provide students with a competitive market salary, career advancement prospects and other additional

benefits, such as transport allowances, study leave, sponsorships, insurance cover and discounts to gym facilities.

On successful completion and graduation of their accountancy course, graduates are offered full time employment. One of the benefits that the big four firms have to offer graduates is opportunities for secondment in European countries where they can gain relevant work experience in EU countries in their corresponding audit firms overseas for a period of time and enhance their professional expertise. The level of education in accountancy and English proficiency has contributed to a high demand of Maltese secondees. *"We encourage cross-border employment. If an employee shows willingness to work overseas on behalf of the firm, we would facilitate the process"* (ACC01).

The profession is also promoted to other students who are studying different disciplines, encouraging them to pursue ACCA studies. It is common overseas to find graduates who studied a different discipline before pursuing the path to the accountancy profession. *"If a B.Sc. (honours) Chemistry graduate wanted to pursue ACCA studies, I would immediately employ the person"* (ACC01). The audit firms welcome graduates with different knowledge and skills, because they join with broader perspectives, bringing in added value to the audit and advisory field. *"A graduate does not need to be an accountant to join the firm. You have to join to be an accountant* (ACC01). In the past, the model was to only seek and employ the pure, *'vernacular'* accountants.

The demand for skilled graduates is so high that audit firms have resorted to recruiting accountancy graduates from European and third world countries to address the short fall. These foreign nationals are complementing the Maltese workforce and not replacing it. Many graduates who are sourced from the Philippines, Spain, Greece and other countries, have already been working with the big four firms in their own country. For example, one audit firm recruited twelve Philippine accountancy graduates who were working with KPMG in Manila all at once in 2011. These joined the Malta firm's talent pool. *"They are hardworking, intelligent, polite and soft*

spoken people. After three to four years working with our firm, they generally seek work opportunities in another firm in a different country" (ACC02).

This demand for foreign graduate employment has put pressure on Government entities to smoothen and fast track the unhurried process of qualification equivalence, issuing of work permits and visas for business. Two out of ten interviewees asked NCFHE to identify which foreign universities would be suitable for recruiting graduates. "*If you want to go out there looking for people, at least look in the right places"* (GOV09).

Another audit firm interviewee requested NCFHE to give them graduate statistics for countries with high unemployment rates and universities that issued comparable degrees, to help the firm identify jurisdictions they intended to target, such as Spain and Italy. *"Graduates would end up on the unemployment register. It is better to move across Europe than employ from a third world country – it is easier for everyone"* (GOV09).

Derived Demand

The demand for accountants is a derived one and its increase is driven by a variety of forces. The primary factor is the increased number of clients and the workload. The number of listed companies has increased dramatically from 40,000 to around 70,000 in the past five years, all requiring different services (MFSA, 2015). Foreign banks, insurance captives, international trading companies (ITCs), SICAVs and betting companies have found it advantageous to set up in Malta. These companies require a variety of services from the setting up process to tax compliance and auditing – services generally offered by the big four firms. One interviewee stated that *"within two years, there was an increase of 108 new international audit clients under his portfolio and the number is increasing at a rate of two to three per week"* (ACC05). The pressure on existing personnel is substantial, leading to the demand for new accountancy graduates to meet the increasing workload. Two partners commented that the shortage of qualified staff has to be compensated by manager and partner time.

The major growth areas in the audit firms are the audit, tax and advisory service lines and other speciality areas, such as risk management, which are continually experiencing growth. However, the Audit and Assurance service line generally requires the largest intake of newly qualified accountants. The Advisory service line seeks experienced recruits and the Tax Department requires lawyers as well as accountants. "*Twenty years ago, the back office functions, such as book-keeping, accounting, Tax, VAT compliance for clients would have been significantly smaller. With the growth of financial services industry, there is a bigger demand for skilled people* (ACC07). Accountancy graduates have always found employment on completion of their studies. *"The decision to employ graduates is work driven. Clearly there are more jobs available than there are people to fill them"* (ACC04*).*

The demand for accountancy graduates has led to competition for top talent having not only technical proficiency, but also interpersonal skills and being capable of taking strategic business decisions. *"Accountants need to be flexible, coherent and organised"* (GOV05). Factors that influence the big four firms' demand for accountancy graduates are secondments and labour turnover. Due to the global shortage of accountants, there is a vibrant market for short and long term overseas secondments. While secondments are not generally considered a prime driver of demand for recruitment, a shortage of graduates implies that audit firms cannot fulfil the demand for them. Interviewees stated that by sending graduates on secondments means that the audit firm benefits financially and saves on training costs, whilst the graduates gain relevant work experience and exposure.

These firms easily recruit graduates but retention of a high quality workforce can be a challenge. *"Graduates obtain their practising certificate and warrant after three years of relevant work experience and often tend to leave the firms to work in industry such as banks, insurance and ICT, I-gaming companies"* (ACC01). Turnover rates differ among the big four firms. "W*e lose 10% of our staff every year. This is not necessarily a bad thing. We need movement in the firm to avoid stagnation"* (ACC05). Exit interviews are carried out by all the audit firms and three out of the four claim that the main reasons for graduates leaving would not be about money, but rather due too much pressure or wanting a better work-life balance. "60% to 65% of

the large audit firms' workforce is female. Female accountants are more inclined to eventually leave the firms due to the working conditions, such as the long hours, which are not compatible with family commitments" (Finch, 2014, p.93).

The audit firms experience a high turnover of talent due to an increase in labour mobility, whereby graduates tend to look proactively for better opportunities and job diversification. Finch (2014, p.137)'s analysis of job mobility of accountancy graduates with a sample size of 1,202 and a 27% response rate (n=320), found that 63.6% of the warranted accountants changed their jobs throughout their career. 96.4% changed jobs in Malta and 23.1% of these graduates have also worked in the EU, whilst 15.4% had sought employment in non-EU countries.

> "Labour mobility broadens minds, allows firms to fill gaps in their workforce, reduces shortages in other countries and enriches the quality of the labour force through the experiences undergone and knowledge accumulated" (Finch, 2014, p.138).

The diversified and rich job experiences from cross-border job mobility enables individuals to gain first-hand knowledge of highly specialised areas, which they would otherwise never experience in a small country like Malta. Moreover, the big four firms benefit once graduates return to Malta. *"Labour mobility is a positive concept for businesses, as it enables accountants with strong skill sets to join job markets and bring new skills and talents to traditional practices"* (ACC05).

Whilst recruitment will always be required to compensate for a decrease in graduate numbers, the increased demand implies recruitment for growth. Two interviewees were very resolute that quality should not be compromised. Despite the firms having a high demand for accountancy graduates, three out of the four refuse to accept someone, if they do not fulfil their requirements. Four out of the eight interviewees also highlighted the fact that staff members are subject to quality reviews by the international firm. The setting-up of the Quality Assurance Oversight Committee (QAOC) which is part of the Accountancy Board, is not to be underestimated (Appendix 17). One of the Committee's functions includes the ultimate responsibility

for the oversight of the approval and registration of statutory auditors and audit firms. *"We prefer not to recruit rather than compromise quality"* (ACC06). One out of the four HR managers stated that *"at times, in tight situations, you may not always get what you want and have to settle for less"* (ACC01). However, quality is a relative and subjective term and training can address some shortcomings.

Skills can be divided into firm, industry and generic or non-technical skills according to Estevez-Abe et al., (2001) theory discussed in chapter 3. Accountancy and audit firms are multidisciplinary and do not have any firm specific skills. For example, a Forensic Fraud Department within an audit firm is a highly specialised area and there are only about five specialists (EY, 2015) in Malta. Audit firms have no copyright over such a specialisation. The industry skills required in the audit, tax and advisory service lines are similar and transferable in the big four firms, with each service line having its own technical expertise. If a graduate is working on the audit service line, depth of knowledge, discipline and working under pressure to meet tight deadlines are essential skills. Auditors value attention to detail and need well-honed investigative skills to detect deception, fraud and intentional mis-statements. Accounting requires a person who is more detail-oriented and focused. A tax service line requires staff members to have effective analytical and organisational skills. In advisory or transactional services, strong analytical minds and reactive skills are crucial. Typically, those who work in transaction services are 'poor' in administrative matters, but excellent in client facing situations and perform well during a crisis. *"Deadlines are fast approaching and they need to act quickly"* (ACC03). Graduates working in audit or tax would be effective administratively, organised and timely, but may not be quick to respond during a crisis. In sum, specific non-technical skills are important depending on the service line.

Graduates do have the opportunity to move to a different service line if they feel they are not enjoying the work. One partner stated that *"this depends on the graduate's disposition. If a graduate enjoys meeting clients and can perform well during a crisis, auditing would be mundane"* (ACC04). The audit service line focuses on costs, whereas the transaction services line focuses on a problem existing today, solving it

for tomorrow and looking into the future; the tax service line involves a mixture of both.

> *"Auditing is investigative. Transaction services are more creative and the tax service line focuses on problem solving and compliance. A graduate can cross from audit to compliance and vice versa. A move from transactional services to compliance would prove difficult depending on the graduate's skills* (ACC04).

"*These graduates do not come with any industry skills. The University degree does not equip them with specific skills. All the industry training comes after they join the firm and not before"* (ACC05). Technical skills are a prerequisite, but these alone are not enough as the job's scope broadens. "The evolution of the skills of internal audit professionals is aligning with, or is corresponding to, the evolution of the profession itself," stated Richard Chambers, chief executive and president of the Institute of Internal Auditors (IIA).

Employability Discourses

The importance of non-technical skills for effective graduate workplace performance is undisputed, yet the constant debate among stakeholders is the responsibility for their development. Six out of the ten interviewees claimed that there was an expectation that the HEIs were responsible for the development of both technical and non-technical skills prior to employment. The University is expected to teach everything and pack it into the curriculum. Some educators perceive that developing employability skills in undergraduate education detracts from the University's "overarching purpose of general learning and developing creativity and inquiry in undergraduates. The shift in focus from academic inquiry to work-readiness is perceived as devaluing higher education" (Starkey and Tempest, 2009, p.578). Skill development is perceived by academics as more appropriate to industry than the university classroom. The debate is in identifying the point at which educational responsibilities for University graduates end and those of professional bodies and employers begin.

The University's accountancy curriculum favours specialised technical skills even though there are study units, such as entrepreneurship and innovation and applied research tools for business, which attempt to address these generic skills. *"University seems to focus on preparing students for technically-based exams,"* claimed eight out of the ten interviewees. *"It is not enough to prepare knowledgeable graduates, but creative ones"* (ACC09). The discourse suggests that generic or non-technical skills call for professionals to be more generalist with specialist knowledge. "Being a professional in the [accountancy] firm is understood […] as being more to do with ways of conducting oneself than with the possession of technical knowledge or being certified to practise" (Grey, 1998, p.569).

A disparity between industry requirements and higher education provision leads to skills gaps. For employers, graduate skills gaps reduce productivity and lead to organisational inefficiencies. These gaps also cause problems at the macro-economic level. Tomorrow's managers must possess leadership, decision making and critical thinking skills to problem solve and create opportunities through change. *"I do not think the University accountancy students are given enough exposure to critically think. An ACCA student is better prepared and tends to have an analytical mind. We need free thinkers"* (ACC04). In fact, the audit firms consider ACCA or ACA students better prepared for full-time employment. They learn what they have to do and know the routine early on in their career. One audit firm stated that these students join their firm and also enrol on their soft skills based programme. *"We get them younger where soft skills are imbued earlier even though they might not be technically qualified like the University students during their placements"* (ACC06). Employers tend to take a short term view. *"Our graduates have a more solid, deeper educational foundation than ACCA or ACA and have a second major to complement their accountancy degree"* (HEI08).

Employers have challenged educators to revisit their pedagogy and have questioned the relevance of the course content" (Tempone and Martin, 2003, p.227). Robley et al., (2005, p.221) suggest that pedagogy can be *'embedding'* or *'in parallel'* (generic) skill development. *"We are aware that the students do not graduate with all the 'necessary' skills although we try to include methods of acquiring skills*

during the taught curricula such as participation, presentation and debating skills" (ACC10).

There is a tendency to view the role of Universities as providing graduates with life-long learning skills. Woronoff (2009) argues that substantive, disciplinary knowledge is best taught at university and 'expertise' - the application of contextualisation of knowledge - in the workplace. It is considered that exposure to a work environment assists in the development of a range of skills including technical and non-technical skills. Employers claimed that the disciplinary knowledge is taught by the education providers and their role as audit firms is to help graduates apply their knowledge, which is learnt at the workplace. This is why they offer internships with the firms during their summer months to gain exposure and experience in the accountancy world.

> "We must provide a skilled and well-prepared workforce which businesses can utilise to expand. Having a company open its offices in Malta but employing non-Maltese simply because they do not have the right skills would be a terrible waste as well as an expensive alternative for the business itself" (Minister E. Bartolo, MEDE, 2014).

Institutional actors should not operate in isolation. Five out of the eight employers agreed with another that the skills gaps are the responsibility of both employers and the University. It is a joint venture.

Another issue that was highlighted during the interviews was whether the firms needed subject specialists or broader cross-disciplinary knowledge and skills. The need for accountancy graduates cannot be emphasised enough and one audit firm stated that they also needed MCAST accounting technicians. Every organisation has a pyramid structure and service lines have duties that could easily be carried out by accounting technicians instead of graduates. "*We seem to be focusing on qualifications only. A graduate with a degree has expectations of a higher salary than a technician, besides the fact of underemployment. This would increase costs as a jurisdiction"* (ACC04). There is common agreement in the literature that one of

the skills that distinguishes a professional from a technician is 'intellect.' Cultivating the intellect is important for improving accounting practice and promoting accountability. Qualified graduates raise the standards of the firm. The opposing argument to this is that there are costs involved and an inflation impact, which is negative to the economy, causing recession and closure of businesses. Negative competition with other jurisdictions who try to compete in the same areas would lead to a vicious circle and spiral down. Six of the audit firm representatives stated that they did not employ accounting technicians.

> *"A client who uses our services has the right to expect a certain technical skill as a given. Accounting technicians do not have these high level technical skills. Our business, our profession, is a graduate driven profession, so the accounting technicians end up doing repetitive accounting tasks just like a fund administrator, which we do not do in our firm"* (ACC05).

Six out of the eight employer interviewees claimed that both generalists and subject specialists are required. One interviewee stated that at times more specialists are required, but because Malta is so small, generalists are needed. Six out of eight interviewees claimed that their firms give great value to students reading for a law degree, who are also studying for an ACCA qualification. These would have an edge over the generalists. *"I think the market for generalists is becoming smaller and in my view we are going to need more specialists as Malta continues to grow"* (ACC06). However, the value of this *'edge'* is getting smaller. S*tudents majoring in accountancy, graduate with a master degree which fulfils the requirements agreed to in the Declaration of Bologna. The bachelor degrees are equally recognised and are treated similarly"* (ACC10).

There needs to be a holistic approach to understanding the factors that may influence the development of undergraduates' employability skills and how curricula and pedagogy could be adjusted, accordingly, to enhance skill outcomes. An understanding of the interacting forces that influence employability skills in undergraduates may enable institutional actors to identify and implement measures

that will enhance skill outcomes, the bridging prevalent skills gaps that graduating students have.

Each of the four institutional actors in the accountancy field, were questioned according to the interview guide. The latter was divided into six topics and the data were analysed. Twelve themes emerged, which are tabulated in Table 17. These actors demonstrated commonality in the thematic issues but tended to focus on and discuss some themes more than others, showing a different emphasis and importance in the accountancy case study.

Table 17: Thematic table of institutional actors related to the Accountancy field

Themes	Government	Higher Education Institutions	Professional Associations	Employers
Use of different language	✓	✓	✓	✓
The meaning of employability	✓	✓	✓	✓
The value of credentials	✓	✓	✓	✓
The role of the University	✓	✓	✓	✓
Perceptions	✓	✓	✓	✓
Expectations	x	✓	×	✓
Competitiveness	×	✓	×	✓
Modes of training provision	×	✓	×	✓
Labour mobility	×	×	×	✓
Placements and incentives	✓	×	✓	✓
Collaboration	✓	✓	✓	✓
Skills gaps	✓	✓	✓	✓

Source: researcher's analysis, compilation and design, 2016

Clearly, from Table 17 it can be seen that the themes of interest vary to some degree across the interlocutors. Accountancy employers focus on all the twelve themes, but HEIs put less emphasis on labour mobility, placements and incentives. Professional associations do not focus on expectations, competitiveness, and modes of training provision or labour mobility. The Government would appear to be less concerned about expectations, competitiveness, modes of training provision and labour mobility. Having considered the principal themes in the discourses employed by the institutional actors in this field, an explanation for their focus in terms of their roles and interests is provided next.

6.5 Institutional actors and policy making

The accountancy profession has been impacted upon by the events relating the establishment of local audit firms, the introduction of various legislation, standards and directives, Malta's accession to the European Union and the routes to becoming an accountant. A policy development was the introduction and subsequent enactment of International Accounting and Auditing standards in Malta 1979. This was believed to have been the way forward for Malta, because the profession would show independence of mind by adopting an International Framework and "not be accused of neo-colonialism if the UK framework was adopted" (F. Mifsud Bonnici, MIA cited by The Accountant, summer, p.15). During this period, the first Maltese audit firm was established, which joined forces with an international firm. The benefits of being associated with large international firms included client demand, overseas and local training as well as technical support. The international firm imposed standards and audit methodology and carried out quality assurance checks on the Maltese correspondent firm in order to safeguard its reputation.

The enactment of the Accountancy Profession Act XXVIII (APA) of 1979 led to the establishment of the Accountancy Board answerable to the Minister for Finance. The Board issues warrants, deals with professional misconduct and put forward recommendations. Respondents viewed this legislation at the time as a form of control by the Government on the profession, contending that it had adopted a centralised approach. A persistent threat mentioned by six of the eight employer interviewees was the closure of the MIA. Relations between the Accountancy Board

and MIA were strained and disagreements began to emerge. Membership fees contributed to the Institute's survival. It could be interpreted that the Government wanted to have a firm grasp of the profession. The MIA believed that this was a *'dangerous'* position, because the profession would become subject to 'unfettered political influences' (Abela, 2012).

Prior to the set-up of the accountancy degree at the University, the MIA was the only Institute that offered foreign professional qualifications in accountancy. It felt threatened that the B.A. (honours) Accountancy qualification set up in 1977 satisfied the academic requirements for a warrant and that graduates were allowed to practise in Malta. Professional accountants with a University degree or an ACCA/ACA qualification were both suitable for the industry.

The introduction of the undergraduate course was a significant step in the context of Malta's socioeconomic development (Darmanin, 1989). The course had been launched as part of the worker-student scheme. It was mandatory for accountancy students to work five months during their work phase, but not necessarily in accounting related areas. This implied that the Accountancy Profession Act XXVIII 1979 was not harmonised with the internationally recognised mandatory requirements (IFAC), which stipulate that for a person to become a qualified accountant, in addition to a five-year academic course, three years accounting experience should be completed in a supervised manner. This anomaly ran the risk that "accountancy graduates would be conferred a warrant without ever having effectively seen a cash book" (Mifsud Bonnici, 2012, cited by The Accountant, summer 2012, p.15).

Another landmark in policy development was the enactment of the Companies Act (CA) 1995, which directly impinged on the accountancy profession. This legislation included the mandatory filing of accounts, preparation of consolidated accounts and adherence to international accounting standards (IAS). The MIA had influenced the Government to mandate adherence to these international accounting standards before they were discussed in Europe, so that Malta would be able to attract new business and offer financial services. Partners in audit firms were familiar with the laws

related to companies since they were already using IAS and ISA standards. *"International reporting standards are not a country jurisdiction and are used across the globe"* (ACC04). All the respondents felt that this was a step in the right direction.

For financial and audit firms to provide services to clients, authorisation is given by MFSA, which was set up in 2002. The Companies' Act created the need for specialisation in the accountancy profession. MFSA's Educative Consultative Council (ECC) role is to offer organised programmes aimed at filling skills gaps in the finance sector. It also keeps abreast of ongoing developments within the financial services sector and contributes to the overall technical training provision by supporting people in the sector or those wishing to pursue a career beyond academic training.

The EU Eighth directive 2005 called for the harmonisation of accounting standards and the removal of any discrepancies among member states. That is, *"Malta had to bring the profession in line with international developments and embrace EU directives"* (ACC07). Regulation of the accountancy profession was to be shifted to the Accountancy Board, (since it has the resources, time and technical ability) which would have the power to issue directives and the role of oversight in order to protect the public interest. The EU Eighth directive stipulates the duties of auditors and imposed the Code of Ethics, independence requirements (based on IFAC rules) and quality assurance on accountancy firms, making a real change in the regulation. The MIA is regulated by the IAESB. The Institute also offers "continuing professional education (CPE) and ensures its members comply with ethical standards (Code of Ethics), accounting standards (IFRSs as adopted by the EU) and auditing standards (ISAs)" (Deloitte, 2013). The MIA put CPE regulations in place in 2007, obliging all warranted accountants to attend at least 120 hours of CPE activities over a three year period. This implies that accountants are to keep themselves abreast with changes occurring in the accountancy field and update their knowledge, skills and attitudes in order to remain competent in the profession.

A policy concern that accountancy practitioners expressed is the impact of de-regulation of small and medium enterprises (SME) from a mandatory audit. This Directive would have a negative effect on the growth of the profession in Malta since 99% of the firms in Malta are SMEs.

> "The removal of audit regulation would hamper the attractiveness of Malta as foreign direct investment and hinder local companies' growth. We do not want audit regulation to be removed. After all, audits for tax purposes would still need to be done" (Mr A. Borg, President, MCCEI).

Whilst many firms would be affected, the big four firms viewed this policy on de-regulation as an opportunity to focus more on other value-added services, such as tax and advisory. *"The removal of this law would improve relationships with clients and generate more work and growth of the profession"* (ACC03). This change in legislation may have an impact on the skills requirement of graduates and affect the profession. Roles, such as trusted business advisors, would be needed rather than consolidated business attesters, together with non-technical skills, such as effective communication.

In order to strengthen Malta's financial services brand, Finance Malta was set up. It represents industry associations and the Government of Malta. The findings of a business confidence financial services survey 2016 revealed that there was an increase in employment, while competition was identified as the limiting factor to increasing the level of business. Organisations' views on competitiveness were that Malta would be facing stiffer challenges. Staff turnover within the sector has increased and 65% of companies have experienced a rise in total operating costs driven by higher levels of employment (45% respondents) and payroll costs (45% respondents). These results indicate the need for more skilled personnel. Companies have called on policymakers to focus on "working closely with the industry for best case practices and attracting high calibre professionals to the island" (Financial services survey, 2016, p.30).

6.6 Skills Regime

The routes to becoming an accountant are as follows. Students may opt to read for a master's degree in Accountancy[39] at the University of Malta or can enrol on ACCA or ACA courses[40] on a full time or part-time basis, being granted some exemptions.[41] Generally, students enrolled on a part time basis, would be employed with a firm where the course, books and examinations are paid for and other incentives are given.

The M. Accountancy (honours) consists of five core study areas which comprise the foundation year and thereafter attend a portfolio of study units (Appendix 18). *"We review our study units on a yearly basis so as to update the M. Accountancy honours course"* (ACC10). Study units are introduced based on different sources of information. Industry and Government professionals give direct input by lecturing on the courses and informally provide feedback to the Department on current market trends. The higher diploma in public accounting and finance was created in response to the Government's requirements for accounting technicians. *"Financial services law was introduced as an elective, because the law practitioners highlighted its importance and relevance to the financial market"* (ACC10).

In response to globalisation and the market, the MIA was influential in negotiating a joint examination scheme with the ACCA, where students could be examined like other accountants worldwide and sit for a Maltese variant qualification. The joint examination scheme (JES) gave prospective students access to local tuition and a path leading to an accountancy qualification. Since the ACCA is structured on IFRSs and is internationally recognised, providing globally-accepted and portable qualifications with local recognition and relevance, these students are attractive to multinational enterprises, which have operations in Malta and overseas companies. Newly qualified ACCA accountants will have already been working with audit firms on a full time basis as students, gaining relevant work experience and maturity. In the past, audit firms were more willing to recruit ACCA students, because there was a guaranteed

[39]M. Accountancy (honours), ACCA and ACA are all pegged at level 7 in the NQF.
[40]ACA is only being offered to employees already working with one of the big four audit firms before they can begin their ACA qualification (AIM Professional Academy, 2016).
[41]No exemptions are given for ACCA's professional papers.

six-year employment period for the students to complete their qualification, followed by three years post-qualification to obtain their warrant.

Education and training providers offer two distinct routes to become a professional accountant - ACCA and ACA qualifications. "ACCA, in partnership with MIA, continues to provide a pathway for individuals who aspire to have a rewarding and fulfilling career in business and finance" (Ms L. Hughes, ACCA Head, Western Europe and Ireland).

In 2013, MIA partnered with ICAEW to offer ACA on a full time basis. ACA's four key components are found in Appendix 18. "ICAEW Chartered Accountants are recognised worldwide for their quality, integrity and commercial acumen… Our partnership with MIA on regulatory and technical matters is also a key part of our success" (Dr M. Manuzi, ICAEW Regional Director, Europe). A fully Maltese-owned tuition provider called AIM Professional Academy Ltd (AIM) has been set up and their directors also sit on the MIA's Council. This change is reflecting the new synergies.

Audit firms employ both university and ACCA/ACA graduates. University graduates tend to prefer working in the audit and assurance service line followed by financial accounting, taxation, management accounting as well as financial management and advisory. The human resource managers of the audit firms claimed that could be because the graduates are steered towards the audit function in their studies. On the other hand, management accounting is more prevalent with ACCA students, which might be due to the fact that most of the graduates work in private industry. Statistical studies show a significant association between area of interest and course of studies.

The interviewees were asked about their certificate preferences and all agreed that ACA or ACCA were preferred to varying degrees. *"There was a time where I thought that having an ACA was better than ACCA or a University graduate"* (ACC08), but this perception has changed over time. The interviewees claimed that both bring something different to the table, which results in better solutions. The ACA qualification tends to attract persons who may already have a degree, which is the way

it was marketed in the past. It has a prestigious brand and the depth of knowledge required is greater than ACCA or the M. Accountancy (honours). *"ACA tends to have a sense of business and a broader outlook on life"* (ACC01). The University, ACCA and ACA have similar course content. However, MIA claims that at times there is a problem with equivalence especially when considering ACCA/ACA exemptions. *"When the Accountancy Department restructured the course, many topics were added, which ACCA considers irrelevant or only a part of their syllabus is covered"* (ACC12).

Non-technical skills in these three programmes vary. The accountancy course at University offers an array of non-technical skills such as communications: an overview; an introduction to creativity; careers and job search skills and Innovation and entrepreneurship: practical approaches. The ACCA course covers five essential skills, namely, manage self, communicate effectively, manage ongoing activities in the area of responsibility, improve departmental performance and manage an assignment. The ACA qualification improves students' ability and performance in seven key areas, including: adding value, communication, decision making, problem solving, team working and technical competence. The non-technical study units offered to University students are optional and can only select one or two per academic year. For ACCA/ACA, these modules are compulsory and the students are assessed.

Training provision has become an essential requirement for accountancy graduates in the workplace. The audit firms tend to quantify the amount of training. 80% would be dedicated to technical learning and 20% non-technical learning (MIA regulations). *"The firm addresses the non-technical learning at different levels of entry or promotion within the firm"* (ACC03). A new joiner generally attends an induction programme. The method of training includes classroom and web-based learning. There are milestone CPE events, which include a mixture of in-house training: face-to-face classroom, one to one, computer-based, web-based, conference calls webinars, podcasts and external events, such as guest speakers. The interviewees all claimed that the number of internal CPE hours that are expected to be carried out is more

demanding. *"We have internal CPE requirements which are more onerous that those expected by MIA"* (ACC04).

The respondents revealed that accountants working in the audit firms are exposed to a considerable amount of relevant technical learning and non-technical training. When accountancy graduates join the big four firms they are immediately channelled into one of the service lines and grow in the area of specialisation or are sent to their overseas offices. *"We would try and place people where they are motivated first as long as it fits with our overall plan"* (ACC06). Rotation among service lines is not advocated in these firms, which could be viewed as a limiting factor in terms of knowledge, expertise and personal growth. One audit firm reported that a number of new accountancy graduates are employed and sent to their London office, where they are trained. *"Our people are totally transportable. They are generally located to our UK or US firms and do really well"* (ACC05). One interviewee questioned the method of induction adopted by some of the audit firms.

> *"Graduates are technical knowledgeable, have written a thesis, may have participated in events on campus and also lack the non-technical skills. The University would never be able to fully equip a student with what the firm requires. The graduates may be employable but not ready for employment"* (HEI08).

Eight employer interviewees stated that training must be more business oriented as clients really want someone who can understand and help develop their business. *"Unfortunately, the accountancy graduates being produced do not have the non-technical skills that are required in practice"* (ACC01, ACC03, ACC04, ACC05). All the respondents agreed that non-technical skills depend on the graduate's personality and personal initiative. It is perceived that the University does not offer enough non-technical skills learning to accountancy students. This may be due to the fact that nine out of the 14 interlocutors were not familiar with the university degree's course content. A number of non-technical study units are offered to the students during different semesters throughout the course. When asked whether the audit firms

give feedback to the Accountancy Department if they realise there are technical or non-technical skills gaps, four out of eight interviewees reported that they do not.

A distinction is made as to whether the graduates, who are sought after, are fit for purpose or whether the firm is engaging graduates who have the right attitude to do the job. This audit partner called it the *DAC* factor – drive, attitude and confidence. If a graduate is passionate about accountancy and scores high on the DAC factor, the knowledge and academic results are considered secondary.

6.7 Skills Gaps

The interviewees identified the technical skills and intellect as well as the non-technical skills they are looking for when recruiting accountancy graduates and are lacking. Whilst the research focus is on non-technical skills of accountancy graduates that the industry expects but does not always find, a number of skills gaps in technical skills were also found (Table 18).

Table 18: Employers' expectations of technical skills in new accountancy graduates

Technical skills and intellect	
knowledge of the sector	analytical and critical thinking
depth of subject knowledge	can grasp information quickly
absorb and apply technical knowledge	organisational skills
numeracy	work under pressure
time management	

Source: researcher's compilation and design, 2016

Six out of eight employer interviewees indicated that they were not unduly concerned if there was a lack of technical skills, knowing that any shortcomings could be addressed by providing on-the-job or external training or through work experience. While there was a degree of consensus on major non-technical skill themes, there was a debate about the detail resulting in revising and refining the categories. Table 19 highlights the critical skills required by accountancy graduates as perceived by the interviewees. One important aspect in this table is that it is not

just a menu of discrete non-technical skills as it also contains personal characteristics or behaviours, such as the importance of graduates having a professional outlook, confidence and a *'can-do'* approach.

Table 19 reports the qualitative findings and rates the types of essential non-technical skills sought by institutional actors in order of perceived importance, based on the thematic analysis of the classified responses.

Table 19: Institutional actors' expectations of non-technical skills in new accountancy graduates

Non-Technical Skills	Frequency of response			
	Regulator (x1)	**Higher Education Institutions (x3)**	**Professional Associations (x2)**	**Employers (x8)**
Communication skills • effective verbal and written communication • client-facing communication • articulate clearly in the English language • telephone handling • to distinguish between the formal and informal approach • presentation skills	**1**	**3**	**2**	**8**
Teamwork • flexible • adaptable	**1**	**3**	**2**	**8**
Problem solving	**1**	**3**	**2**	**8**
Commercial/business awareness • can think outside the box • able to see the bigger picture • able to network • knowledge of the sector/market that clients operate in	**1**	**2**	**1**	**5**
Language skills • spoken English • knowledge of foreign language/s	**1**	**1**	**1**	**6**
Emotional Intelligence • self-awareness • social awareness • self-management	**1**	**2**	**1**	**5**
Taking Initiative	**1**	**1**	**2**	**5**
Professional ethics	**1**	**1**	**1**	**5**
Personal characteristics or behaviour • attitude • confidence • drive • professional outlook • working independently • personality fit • *'can do'* approach	**1**	**3**	**2**	**7**
Items not formally articulated included leadership, critical thinking and creativity.				

Source: researcher's analysis, compilation and design, 2016

The top three most important and desired non-technical skills (from Table 19) sought by the accountancy profession include communication skills, teamwork and problem-solving. Many of the interviewees viewed these critical skills to be key to settling into professional life with colleagues and clients. Four out of the fourteen interviewees also argued that leadership, critical thinking skills and creativity are also missing from graduates' personal tool kits. These skills are portable and will transfer from one job to another.

Employers further indicated the importance of prior work experience, membership of student societies and involvement in community work that contribute to developing these non-technical skills. Effective communication is the skill most critical to the audit firms since their business mainly involves communicating with clients. *"Since it is a very competitive market, clients choose their audit firm for services depending on whether we are able to build relationships quickly"* (ACC05). A written command of the English language is beneficial as it saves the company time. *"Somebody who can write without having to make amendments saves time for someone else to correct it*. *Foreign language skills give graduates an edge during recruitment, because the client base of audit firms changes over time"* (ACC03). *"The firm would command a premium with foreign clients, if our graduates can speak their language"* (ACC07).

These findings were not unexpected in that other research studies have reported the heightened emphasis on these non-technical skills and their importance in the labour market. While six out of the eight employers also noted the desirability of technical skills, these could not be regarded as the dominant graduate skill sets. The research has focused on the perception of interlocutors on the non-technical skills as distinguishing qualities that accountancy graduates should have generally acquired during their time at University when they enter the labour market and what skills gaps exist. It is evident that the expectations of interlocutors in terms of non-technical skills required of graduates are not being fulfilled as these skills are often inadequately developed. From the results, the institutional actors were unified in their call for the greater development of such skills in graduates.

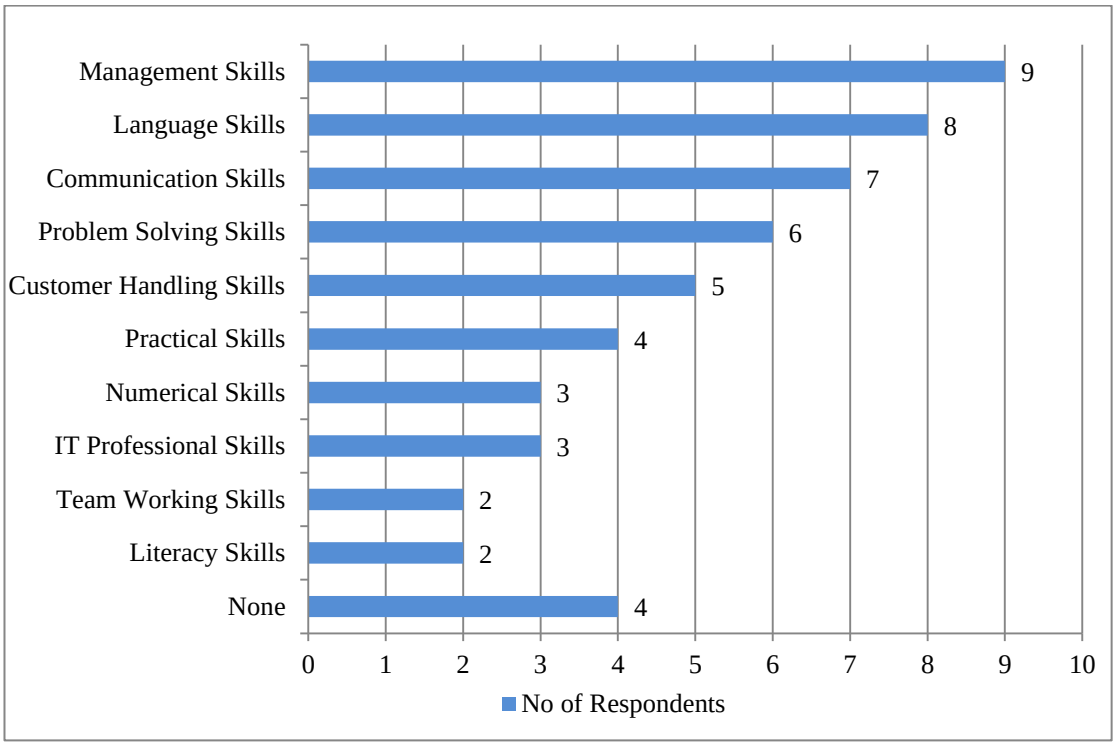
To reaffirm these findings, the recent preliminary national employee skills survey 2016 (n=671 valid responses),[42] which stipulates that the main skills lacking in applicants for vacancies that are hard to fill are technical skills, written communication skills, team working skills and problem solving skills. Critical skills that are considered as being important by employers are oral communication skills (78.7%), team working skills (78.6%), English language skills (74.4%) and customer handling skills (72.3%).

Reference is also made to three other surveys that were carried out by the IIA in 2014, the MFSA's ECC in 2015 and E-cubed Consultants on behalf of four institutional actors, co-funded by the EU, in 2011.[43] These surveys reveal that non-technical skills are lacking in accountancy graduates and emphasised that both communication skills and teamwork seemed to be the skills gaps in their skill sets. The 2014 survey carried out by the IIA on what the Chief Audit Executives perceive to be the seven attributes of highly effective internal auditors were communication skills, teamwork, integrity, diversity, relationship building, partnering and continuous learning. These attributes are similar to the non-technical skills identified by the interviewee sample. In 2014, Paul McDonald, Chambers' co-author and a Senior Executive Director at Robert Half, stated that "the non-technical skills – writing skills, solid presentation skills – have really become mandatory. As employees advance up the company's organisation chart, these skills become more critical."

The MFSA's ECC recently commissioned a survey on skills needs to identify the skill gaps existing within the financial services sector. The 2015 survey revealed the following significant findings: the technical gaps experienced in this sector are compliance and general regulatory requirements. The most significant non-technical skills that are lacking in graduates are management, language and communication skills, as highlighted in Figure 19.

[42]NCFHE statistics, July 2016. The full report is due to be published in December 2016.
[43]The actors were MCAST, ITS, MQC and the MCCEI. This project was part of the Operational Programme II Cohesion Policy 2007-2013 and part-financed by the EU's European Social Fund (ESF).

Figure 19: Skill deficiencies amongst applicants of hard-to-fill vacancies



Source: MFSA Skills Needs Survey 2015 Report, p. 22

These skills gaps resonate with my research findings in the audit firms and they also identified similar gaps in new accountancy graduates. An important issue that respondents also emphasised was the lack of commercial or business awareness. *"You build a relationship with clients not on the basis of your technical knowledge and skills, but on your business awareness and general knowledge"* (ACC05). The findings of a 2011 skills survey (E-Cubed Consultants 2011) in the financial sector in Malta identified the following skills gaps, namely, communication skills, use of business English (verbal and written), office work ethics, data protection, selling skills and professional secrecy.

Ten out of the 14 interviewees reported that attitude towards the profession was an important characteristic that they gave value to. 43.7% of respondents in the national skills survey 2016 cited potential recruits having the right attitude and personality as the main problem. At times, new graduates would be reluctant to take on mundane tasks even though they were suited due to their limited skills and experience. Employers would look for evidence of commitment in how new

graduates conducted themselves in the work place. They claimed that graduates enter the workplace with high expectations of being made a partner quickly. This may be because the University engages audit and tax partners from the big four firms (or their associates) or professional accountants from industry. These accountancy professionals and practitioners lecture technical study units on the B. Commerce and master's degree courses or deliver presentations on contemporary issues and development in the accountancy world to these students, who look up to them as role models. They bring the industry perspective into the classroom. Some also deliver sessions on the ACCA/ACA programmes coordinated by education and training providers. The secondment of lecturers to workplace settings may prove valuable in enhancing undergraduate skill development as it could lead to a better appreciation of the needs and parameters of learning and skills application.

Whilst non-technical skills are highly valued when considering graduate employment, all the interviewees stated that a graduate's resumé is enhanced when they build up life experience through leisure activities, club memberships, voluntary work, sport as well as networking with industry and employers through professional association membership. During the interviews, the big four firms stated that graduates are looked upon favourably, if they participate in student organisations, such as Erasmus+ (Appendix 17), AIESEC or Young Enterprise. These activities are vital for mastering skills deemed essential for graduate work-readiness.

The Faculty Dean has a similar view in that FEMA is considered as *"the hidden agenda of the economy and the accountants are the general practitioners of business."* The accountancy graduates make up about 45% of the Faculty (FEMA Statistics, 2015) and do not have any difficulties in finding relevant jobs, because of their good academic skill set. *"Non-technical abilities, such as social skills are enhanced by students' participation in other activities, such as charity events, drama or part-time work. These activities enrich their character beyond studying and grades"* (ACC09).

In an attempt to respond to industry blame, the University has been trying to establish closer linkages with industry so as to understand their skills development

requirements better and collaborate on professional learning initiatives. Employers try to help the *'transition out'* of university education to the profession to be more seamless by providing internship opportunities on student learning. A number of policies, creative pathways and innovative arrangements have been introduced by institutional actors in order to promote the sector and nurture the accountancy profession. The intention is that these *'pathways'* will contribute to addressing the shortages and skills gaps in the accountancy labour market and ensure a continuing pipeline of graduates. These initiatives include financial schemes (Get Qualified Scheme). Other collaborative programmes with different institutional actors have also been organised.

6.8 Conclusion

This chapter is the first of three case studies, which has analysed how institutional actors in the accountancy field interpret, influence and respond to graduate skills availability. Each of the twelve themes was analysed, revealing that the four institutional actors tended to emphasise some thematic issues more than others during the interviews. These themes have been discussed throughout the whole case study and a summary of the thematic analysis is tabulated in Table 20.

Table 20: Thematic analysis by Accountancy institutional actors

Themes[44]	Government	Higher Education Institutions (HEIs)	Professional Associations	Employers
The use of different language	Government considers qualifications as the currency for skills.	HEIs prepare graduates to be *"citizens of the world"* (HEI01).	HEIs are to prepare students in preparation for the world of work and in line with the relevant requirements of the country.	Employers distinguish between technical and non-technical skills and require both for graduates to be employable.
The meaning of employability	Employability is sometimes referred to "graduate jobs or jobs that graduates do" (Purcell et al., 2003, p.18).	The ease with which a graduate finds employment that suits the relevant qualifications.	How easy it is to find a job after graduating with an accountancy degree and being able to apply what has been learnt.	Having a particular skill set and aptitude required by the market. A qualification does not equate to employability skills.
The value of credentials	The regulators (NCFHE and MFSA) ensure that local qualifications are equivalent, comparable and recognised by HEIs in EU member countries.	The value of higher education qualifications is viewed as degrees that are of a high standard and of quality.	The profession gives weighting to which education provider credentials are obtained from. ACCA and ACA are '*sold*' to students as internationally recognised and in tandem, they receive sponsorship from the audit firm they are recruited, together with relevant work experience.	Credentials are the passport to an interview with accountancy and audit firms. They show that graduates have a level of technical skills.
The role of the University	To produce graduates with relevant and recognised qualifications prepared for the labour market so as to be able to make earnings.	Overarching purpose of the University is to provide a holistic education. It is to provide general learning and develop creativity and inquiry in undergraduates. *"It is about creating tomorrow's citizenship and national identity"* (HEI01).	"Universities have been encouraged by employers' associations to develop graduate employability skills for the labour market" (Mason et al., 2009, p.1).	To prepare accountancy students so that they become work-ready for employment.

[44]The theoretical definitions of the twelve themes are found in Appendix 1.

Perceptions	/	Many partners in the audit firms have not experienced university life and do not always see the benefits of graduates attending a degree course. Many do not believe in this experience and lack an understanding of it. University gives students an open mind. There is a generation gap. Baby boomers and Generation X[45] find the millennials disrespectful and having a 'no one is an authority for me' attitude.	MEA's perception on students/graduates is to curtail the approach of a culture of entitlement.	The HEIs focus on getting students to pass examinations and qualify. The academic courses do not teach the students how to think critically. Graduates lack the generic skills required for the workplace. The ACCA and ACA graduates are perceived to be better prepared than the accountancy graduates for the labour market.
Expectations	Government expects HEIs to produce graduates needed for the accountancy sector.	Public HEIs expect Government to fund research, infrastructure and administration. They expect employers to give graduates training in preparation for the work place.	/	Employers expect accountancy graduates to be work-ready and to "*hit the ground running"* (ACC8).
Competitiveness	/	University should not be subservient to the current jobs market. It is in competition with MCAST and education providers offering free and fee-paying courses.	Education and training providers offering similar courses, such as ACCA, are in competition with each other.	Competition for work by skilled graduates who have employability skill sets required for the job.
Modes of training provision	/	HEIs introduce different modes of 'training' by inviting guest speakers from industry, podcasts, group work, student presentations, video clips, visiting companies and industry insights.	Modes of training provision are part-time courses, evening programmes with flexible arrangements to suit students' requirements.	Training and learning take various forms, including on-the-job training, web-based learning and attendance to technical and non-technical seminars or course sponsorships, such as ACCA and ACA.

[45]Millennials are people who were born between 1982 and 2002; *Generation X* are people who were born between 1965 and 1981; and Baby boomers are people who were born between 1946 and 1964.

Labour mobility	/	/	Professional associations tend to 'sell' their internationally recognised ACCA/ACA courses to students by promoting opportunities to work overseas.	*"Labour mobility is a positive concept for businesses, as it enables accountants with strong skill sets to join job markets and bring new skills and talents to traditional practices"* (ACC05).
Placements and incentives	It has introduced financial schemes to help individuals receive tax credits for their payment of training programmes. It offers placement opportunities for University students to gain some exposure and work experience in the public service during the summer months of their course.	Placements are included as elective study units or part of the degree requirements.	Malta Employers Association encourages employers to offer student placements to gain some work experience before graduation and supports MCAST in their apprenticeship scheme. The Association also supports the incentive schemes that the Government has introduced related to courses.	Audit firms offer student placements and internships to University students after the second year of their course, with the intention of offering them full-time employment on completion of their studies. The students are paid over and above their stipend for the 'work' carried out. ACCA/ACA students are offered full employment during their studies and their courses are sponsored. They are also entitled to paid study leave.
Collaboration	It has introduced an employability index for tertiary courses offered by the University on MEA's recommendation.	The University dialogues with MIA. The Department of Accountancy does not have any links with the Faculty of Education. It has no direct communication with the Government. Practitioners are invited to deliver relevant and current subjects to students.	/	Employers collaborate with the Accountancy Board on new regulations and graduates who become warranted. The audit firms have a good rapport with the MIA and big ones are represented on its Council. Firms advertise their vacancies using the University portals.
Skills gaps	It has raised the maintenance grant linked to specific courses, which have been identified as important to the country's needs, in order to incentivise students to enroll on specific courses. For example, science, ICT and pharmacy degrees are eligible for this scheme.	The Department introduced the M. Accountancy (honours) to be in line with the ACCA/ACA programmes. It does not have an IT component, ISACA or public accounting, but there are plans to introduce them in order to address the skills gaps faced by the I-gaming industry. Non-technical skills gaps exist. Method of assessment is in written form and skills, such as presentations, are not given weighting.	Professional associations try to address skills gaps by offering seminars, short courses on technical skills identified by the firms. Accountancy and audit firms are represented on the MIA Council and their subcommittees respond by identifying gaps and addressing them through their offerings.	Employers find that accountancy graduates have a level of technical knowledge that gets them the job, but lack the non-technical skills, which are essential for the accountant's role. Audit firms find the graduates are not ready for the 'job.'

Source: researcher's analysis, compilation and design, 2016

The Government and HEIs define graduate 'employability' differently. The former considers qualifications as the currency for employability. The Government's expectation of HEIs is to increase graduate numbers so as to meet the EU2020 goals and address the skills shortages in the labour market. Employers view qualifications as the necessary passport to be interviewed, but also place value on the employability skills required for their firms, such as communication skills, teamwork and problem solving (according to the findings). Employers view HEIs' objectives differently. *"We do not pull the same rope in one direction, because we have different aims. HEIs' objectives are to produce well-rounded graduates and employers wish to have graduates who are skilled and fast. Both quality and quantity are important but the objective should be quality over quantity"* (ACC05). There are tensions between employers and educational institutions. "*Higher education institutions do not respond fast enough. We begin to lose our competitiveness"* (ACC01). Employers tend to perceive graduates as having high job expectations even though at times they lack critical thinking. *"Many graduates aim to become partner quickly and demonstrate a culture of entitlement"* (EMP01). The reality is that many graduates are not work-ready and need to undergo training, as often stated by employers.

There seems to be the absence of an institutional mechanism to inform employers about any changes to the provision of tertiary education courses. That is, when new programmes are created or relevant study units are introduced, there is no formal mechanism to alert institutional actors. This shows a flaw in the institutional design.

Some institutional actors refuse to 'play' together, demonstrating the power struggles that exist among them. However, there are employers who recognise that the University cannot develop all the technical and non-technical skills required by employers with, in particular, the big four firms recognising that they have an important role to play.

> *"I think we are naïve to suggest that graduates have all the skills we want them to have. We need to train if we want them to do business for us. We do not make money out of them in the early days and we have to carry them to a large extent. It is our people and systems that have got to educate them"* (ACC01).

There seems to be the need for a more coherent, concerted and systematic collaboration between the institutional actors to develop job-related skills. The research has highlighted that whilst there are favourable and positive initiatives being taken by the big four firms, there is a lack of formal interaction between educators and practitioners through a collaborative forum, which is hindering the fulfilment of industry needs. *"I share my views informally as there is no formal set up where we can get together and explore complementary roles in developing generic skills needed by accountancy graduates"* (ACC05). The Faculty Dean is in agreement that there seems to be an absence of dialogue and solid links. *"The Ministry, the University and the private sector are all working on their own. There is no official coordinating mechanism."* Preliminary results from the National Employee Skills Survey 2016 report that the majority of employers (94.6%) said there should be more collaboration between education providers and employers, while only 19.3% of respondents stated that they participated in collaborative activities with educational institutions. As stakeholders in undergraduate education, professional associations and the relationship with student bodies may need to be re-evaluated.

The next chapter focuses on how institutional actors interpret, influence and respond to skills availability in the pharmachem industry. The findings are presented in a similar format to this chapter.

Chapter 7: Graduate Employability in Malta's Pharmachem Sector

"Many new graduates entering industry choose a post where the skills and knowledge are of direct relevance and value."

(Ecclestone, 1998, p.304).

7.1 Introduction

This chapter discusses the context of the pharmachem sector in Malta's small scale economy and the labour demand for pharmacists and scientists. It is the second case study and it examines the same questions as in chapter six. The evidence from this study is that whilst institutional actors seek graduates with the technical knowledge or who are certified to practise, they also emphasise the importance of non-technical skills. The most important and desired non-technical skills that are lacking in pharmachem graduates are identified as key to the Pharmacy and chemistry professions. These are discussed in section 7.7.

Eighteen in-depth interviews related to the pharmachem field, two interviewees representing the Government and the regulator, four interlocutors from HEIs, four representing professional associations, eight employer interviewees comprising Managing Directors, Quality Assurance Managers, qualified persons, chemists and the training or human resource managers (where applicable) from a number of pharmaceutical manufacturing companies (Table 21). The interview questions were divided into the following six topics: 1) the general views of the economy, skills, employment of graduates, 2) employability discourses, 3) synergy between institutional actors, 4) the pharmachem labour market and employment, 5) skills regime and 6) skills gaps. Twelve main themes were drawn out from the in-depth interviews. These findings are compared to the definitions drawn from the scholarly literature in Appendix 1. For the scope of this research, the graduates with a pharmacy, pharmaceutical technology and chemistry degree employed with pharmaceutical companies are being considered. The community, hospital and marketing domains are not covered.

7.2 Context: The Pharmachem sector in the Maltese Economy

The Pharmaceutical Sector Overview

The pharmaceutical industry is a vast and complex sector. It focuses on developing, producing and marketing licensed products to be used for medication purposes. It is ever changing as the need for improved medications/therapeutics is ongoing.

> "The pharmaceutical sector provides substantial investment in research and development, leading to high quality jobs for pharmaceutical and science graduates, unrivalled job multiplier benefits and support for the research community" (PRIMA, 2008, p.40).

The Maltese pharmaceutical manufacturing sector generates significant economic activity and employment. It consists of companies, which produce finished formulations, generic medicines (active pharmaceutical ingredients manufacturing [APIs]), partial manufacturing, importation and batch release and the manufacturing of investigational medicinal products (IMPs). The companies considered in this study handle originator, API manufacturing, partial manufacturing activities as well as importation and batch release companies (Table 21).

Table 21: Pharmaceutical manufacturing companies in Malta

Finished formulations	Active Pharmaceutical Ingredients (API) Manufacturing	Partial Manufacturing	Importation and Batch release	Manufacturing of Investigational medicinal Products (IMPs)
• These **originator companies** use active ingredients to produce tablets known as finished formulations • Require good manufacturing practice (GMP)	• Companies, other than the innovator company produce **generic medicines,** where patent protection has expired. • Require good manufacturing practice (GMP)	• Secondary packaging operators • Finished dosage tablet forms are repackaged according to GMP guidelines and are relabelled. • Require good manufacturing practice (GMP)	• Testing facilities • Tablets produced in non-EU countries, e.g. India, are transported to the Maltese company and released by the QP into the EU market. • Require good manufacturing practice (GMP)	• Products undergoing clinical trials • Require Good manufacturing practice (GMP).
Actavis (Malta) Ltd	Amino Chemicals Ltd (part of DiPharma Group)	Associated Drug Co. Ltd	Aurobindo Pharma (Malta) Ltd	
Siegfried (Malta) Ltd	Sterling Chemical (Malta) Ltd	Consolidated Packaging Ltd	Pharmadox Healthcare Ltd	
Starpharma Ltd	Solea Pharma Ltd (part of Gadea Pharma)	Euro Pharma Malta	ASG Pharma Ltd	
Combino Pharm Manufacturing (Malta)	Medichem	Alphafarma Ltd		
Arrow Pharm Ltd		AET Pharma Malta Ltd (German) Joint venture with sister companies Combino Pharm and Medichem		
Pharmacare Premium (Malta) Ltd				
ChemiPharma (injectables)				
Multigas				
Polygas				

Source: researcher's compilation and design, 2016

Pharmaceutical companies are generally involved in research and development, manufacturing, sales and marketing of their products or on behalf of another business.

All processes that they carry out are subject to a variety of regulations and laws regarding testing, patenting and marketing. They require good manufacturing practices (GMPs) that assure proper design, monitoring and control of manufacturing processes. They also need facilities and help in preventing instances of contamination, mix-ups, deviations, failures and errors. Clean environments are a new concept that each company has to adhere to. This is due to the sensitive nature of the pharmaceutical product and the rigorous requirements set by the GMP standard. GMPs assure that drug products meet their quality standards. *"The country experienced a leap forward in both demand and quality for already existing services, such as the supply of laboratory equipment and construction"* (PHR09).

Companies engaged in the research and production of pharmaceutical products can be categorised in two main groups, namely, originator (finished formulations) and generic manufacturers (APIs). Originator or innovator companies carry out relevant research and consequently develop new formulations of medications that have never been produced. Subsequently, they patent these new developments to transform them into assets of significant commercial value and to ensure exclusivity of manufacture and therefore, achieve revenue generation.

> "A patent is a document, issued upon application, by a government office (or a regional office acting for several countries), which describes an invention and creates a legal situation in which the patented invention can normally only be exploited (manufactured, used, sold, imported) with the authorisation of the owner of the patent" (World Intellectual Property Organisation [WIPO], 2004, p. 17).

In Malta, Intellectual Property (IP) rights include copyrights, trademarks, patents and designs (Deloitte Malta, 2012). For an invention to be patentable in Malta, it must meet certain criteria. The Patents and Designs Act, 2000 chapter 417 (Laws of Malta) states that patentable inventions must be new, involve an inventive step and are intended for industrial applications. The originator relies on patents and other forms of intellectual property to generate its income. The patent gives it a period of exclusivity in which the product can be produced and sold in a monopolistic economic scenario or by selling this right to third parties. The said Act protects the interests of manufacturing companies of a patent against third parties.

Generic pharmaceutical companies reproduce products that have already been formulated by originators. These products are designed by their manufacturers to have equal strengths and a dosage form as those products they are intended to mimic.

> "A generic pharmaceutical product is a medicinal product which has the same qualitative and quantitative composition in active substance and the same pharmaceutical form as the reference medicinal product and whose bioequivalence with the reference medicinal product has been demonstrated by appropriate bioavailability studies" (EU directive, 2004/27/EC).

The research and development required to create a recipe to yield a similar product to that produced by the originator can only be carried out following the expiration of the relevant patents protecting the exclusivity of the originator's own product. Whilst this exclusivity is one of the main strengths of originator companies, generic companies benefit by not bearing the costs of the research and development, which would have been made available by the originator on the expiration of the relevant patent. The costs of market penetration and the development of the product is less than that incurred by the originator companies.

A common misconception is that generic pharmaceutical products are inferior to the original product, because they are designed to perform in a near identical manner as those produced by the originator. *"Generics launched in the European market would have gone through a very broad quality assurance system before they are released"* (PHR03). Therefore, "generic pharmaceutical products are safe and effective alternatives to brand products" (Mr Yu, Deputy Director of the office of generic drugs, FDA, 2013). They reduce prescription costs for both the consumer and the Government.

The Political Context

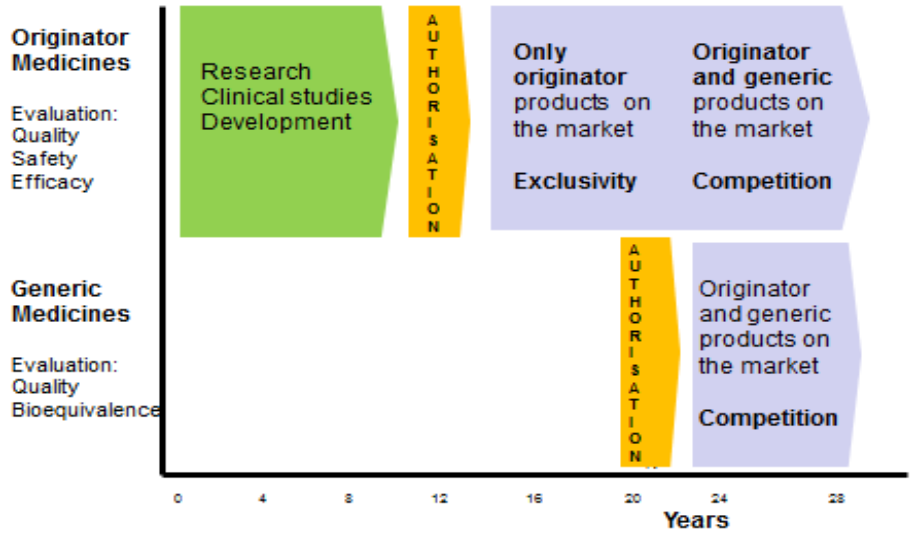
The pharmaceutical industry in Malta began in 1974 with the setting-up of Pharmamed Ltd. The company manufactured generic pharmaceuticals to supply low cost basic medicinal products to aid organisations, such as *Medicines San Frontieres*, the International Dispensary Association (IDA) and UNICEF. Pharmamed Ltd.'s strategic focus was to supply third world countries as opposed to keeping a competitive edge over its competitors.

However, in 1990, Pharmamed Ltd. was bought by an Icelandic company, Delta Ltd, which focused on the development and manufacturing of generic pharmaceutical products eventually to target the European market. A research and development plant was set up. Delta Ltd merged with Pharmaco in 2002 and was taken over by Actavis Ltd. The operational environment was transposed into a sterile one, where this company was considered at the forefront of the international generic pharmaceutical manufacturing industry. During this time, another pharmaceutical company, Arrow Pharm, was also set up in Malta.

Malta Enterprise was given the task of attracting pharmaceutical companies to invest in Malta. It played a central role in Malta's economic development. Technical advice on this emerging industry was sought from the European Generic Association to attract and secure inward investment from foreign pharmaceutical firms. Private investors showed an interest in the local market because of the legislative framework, the favourable incentives for encouraging investment and the gateway to the European market. The incentives included low tax rates, an assurance of financial support and assistance in workforce training, logistical requirements and ready-built factories provided by ME.

Key to investments by pharmaceutical multinationals has been the availability of an educated, English-speaking labour force and the recognition of the 'Roche-Bolar' provision. This provision clearly defines the circumstances by which the originator companies of a patent cannot prevent third parties from performing those acts that are otherwise protected under the patent legislation. The Roche-Bolar exemption was incorporated into the Patents and Designs Act, 2000 in 2002. Generic companies are allowed to undertake development work and produce medicines for the European markets prior to patent expiry (protecting the innovative drug elsewhere), held by originators, but this excludes any product commercialisation. Patented medicines, medicinal ingredients and production processes will not have had their patents registered in Malta due to the insignificant size of the domestic market and retroactive patent registration is prohibited. As a result, a long-term window of opportunity benefited generic pharmaceutical manufacturing companies located in Malta.

Table 22: Comparison between originator and generic medicines process



Source: P. Vella Bonanno, ex-CEO, Medicines Authority, 2009

All originator and generic medicinal products need to be authorised for human and animal use with the objective of ensuring that safe, effective and high quality medicines can quickly be made available to citizens across the European Union. The Malta Medicines Act, 2003 stipulates a six-year data protection period from the date that the originator drug receives marketing authorisation. This implies that generic manufacturing companies (APIs) can produce and stockpile medicinal products (which were not locally patented) for mass release on the same day that the patent of the originator's products expire. This stockpiling strategy, producing volumes of low cost medicinal products, leads these companies to succeed in penetrating the market. The European system offers several routes for the authorisation of medicinal products, namely, the centralised procedure, mutual recognition procedure, the decentralised procedure and the national procedure.[46]

The interpretation of the Roche-Bolar provision gave Malta a competitive edge over other countries that did not make use of this measure. Its exemption in Malta's patent legislation and the limited number of patents that were registered in the country at that time were the reasons for this boom. "We are a small country, but quick to deliver, efficient and offer specific competitive advantages to ensure the long-term sustainability

[46] Available from: https://ec.europa.eu/health/authorisation-procedures-centralised_en [Accessed 20/10/2016].

of the industry" (Mr. A. Camilleri Chairman, Malta Enterprise, cited by the Pharma Report, 2011, p.54). These companies and their development and/or production of pharmaceutical products are all invaluable contributors to the local economy and market. The setting up of the Swiss company, Siegfried (Malta) Ltd. in 2007, a company that takes pride in a zero tolerance approach to quality, was testimony that the local market was able to support even the most demanding of operators.

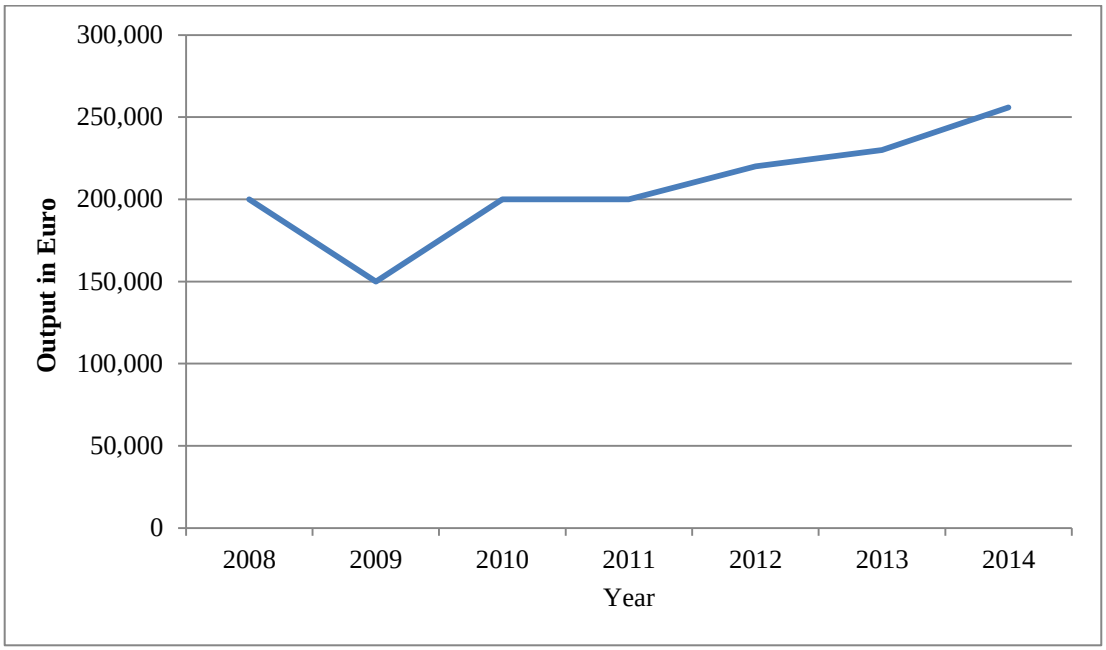
European Union entry in 2004 made Malta more attractive for the manufacturing sector due to the single market's fundamental pillars of free movement of goods, services, capital and people. The EU regulatory framework ensures practices and products are not only effective and efficient in producing the desired results, for they also warrant that the operation of companies is also safe and reputable. Generic pharmaceutical manufacturers promote their medicines to the North African markets where there are established trading routes for onward delivery, particularly to the sub-Saharan region. This has made Malta "a unique hub for combining, testing, research and development, manufacturing, production and batch release of pharmaceuticals" (ibid, 2011, p.52).

In 2007, all member states, including Malta, had to join the European Patent Convention (EPC). This holds that when originator companies register their patents centrally with this Convention, they automatically become enforceable in all signatory countries. The EPC carries out rigorous testing of patent applications and employs specialised personnel "to conduct the necessary research and testing to determine whether a submission for patent registration should be accepted" (Vassallo, 2013, p.58).

The Economic Context

The pharmaceutical industry in Malta has an annual global export turnover of over €295 million per year (NSO, 2013). The performance of this industry has increased steadily over the years, except in 2009, when there was a staggering twenty-five percent decrease in output levels due to the recession (Figure 20).

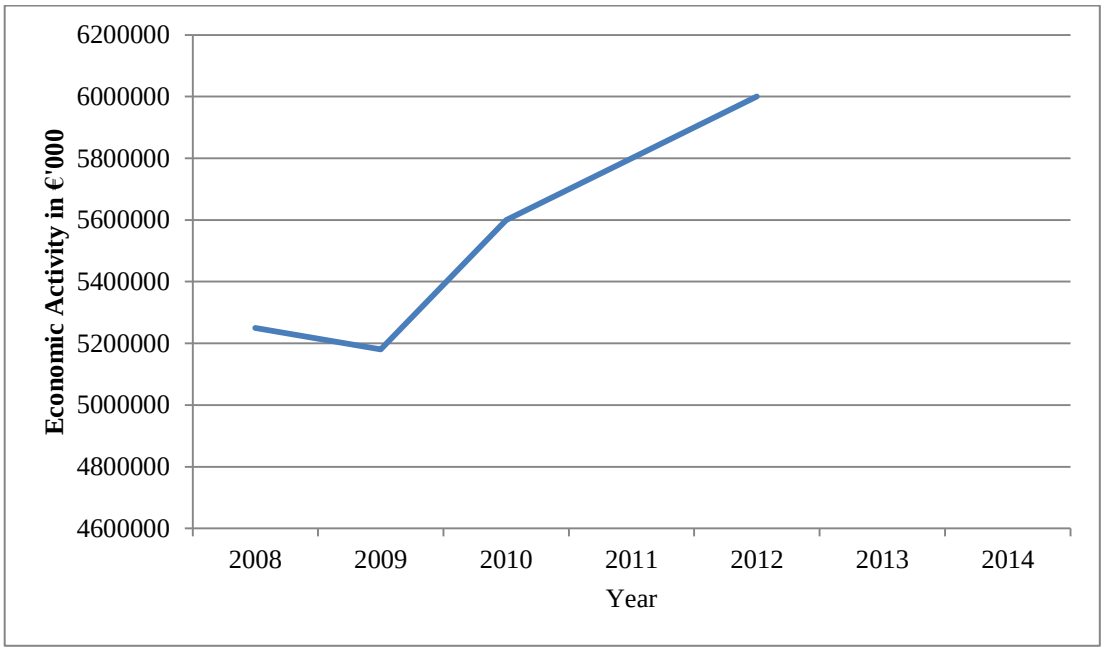
Figure 20: Pharmaceutical Manufacturing Industry Output (in €'000)



Source: Adapted from NSO data, 2014

To assess the industry's performance better, it is important to set it off against the performance of the overall economy.

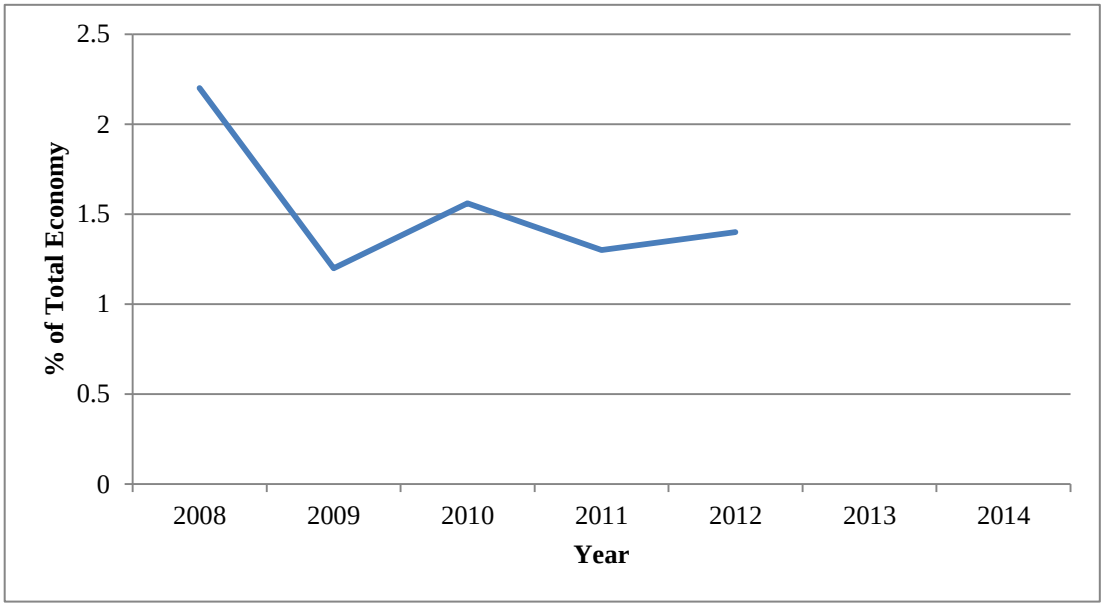
Figure 21: Malta's Economic Activity (in €'000)



Source: Adapted from NSO data, 2014

Figure 21 shows the performance of economic activity over a six year period. The performance of the overall economy registered a constant and significant increase between 2010 and 2014.

Figure 22: Pharmaceutical Manufacturing Industry as a Percentage of the Total Economy



Source: Adapted from NSO data, 2014

Figure 22 reveals that the pharmaceutical industry managed to restabilise and register some growth. This industry directly contributes to the overall economy by means of its production output, i.e. in medicinal products and intellectual property, and has become largely dependent on foreign direct investment for its survival.

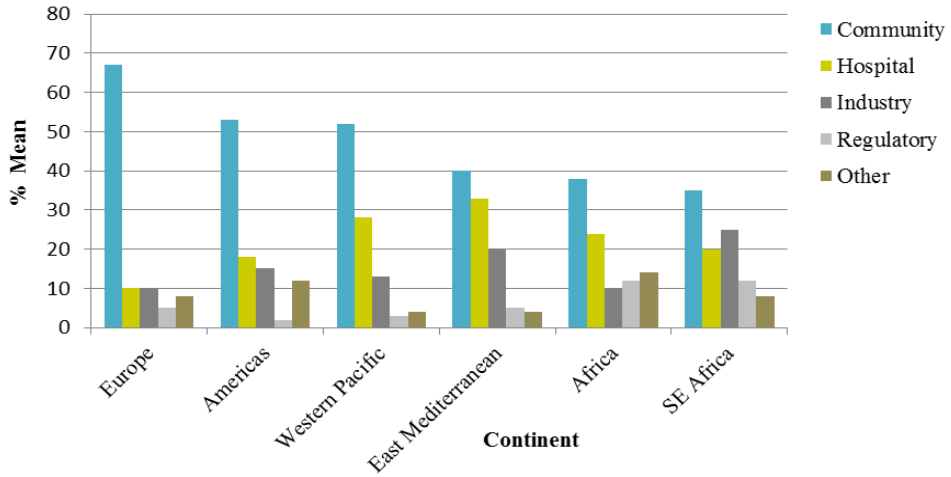
The International Context

This dependency on foreign injection and decision making by pharmaceutical industries implies that the local economy has become sensitive to international considerations. The traditional model of big pharma cannot be sustained in today's environment. The healthcare agenda and politics – no longer scientific advancement – have a major impact on the development of pharmaceuticals. As the population ages, new medical needs emerge and generate a different disease burden. As countries continue to develop, they play an increasingly important role in pharmaceutical marketing and economics. In the face of these challenges, the pharmaceutical industry suffers from a lack of productivity in the laboratory (Kessel, 2011, p.27).

The spending on R&D places great pressure on earnings. R&D costs are soaring but fewer and fewer innovative medicines are being produced and generic sales have outpaced originator sales in the pharmaceutical industry. This has been driven by an increase in demand, the expiration of patents and cost constraints imposed by governments. The response to this crisis has been to prune and streamline research and development with massive cuts in skilled and qualified personnel across the industry. Actavis (Malta) Ltd (which was bought by Watson in 2013 and is now owned by Teva Pharmaceutical Industries Ltd in 2016) decided to close down their R&D in 2013, in response to reduced earnings pressure, making highly specialised Maltese graduates redundant. These highly skilled roles have a limited time frame due to the expiry of patents and because they are dependent on external market forces. These factors are modelling the face of the industry as it moves away from the *"old"* system of big pharma with innovation and production based on chemical synthesis, towards one of small and medium enterprises with innovation and production based on biotechnology. "There is an urgent need to re-power pharmaceutical innovation" (Financial Times, May 2010).

In 2012, the FIP carried out a global pharmaceutical survey on the workforce distribution in different sectors (Figure 23). The global sample revealed that, on average, only 10% of pharmacists were found to be working in industry. The majority of pharmacists, 55%, work in community pharmacy environments, 18% in hospitals, 5% in regulation and 5% in research and academia.

Figure 23: Global pharmacists' distribution by employment area



Source: International Pharmaceutical Federation (FIP), 2012

In Europe, whilst the community pharmacy sector is the most popular, the hospital and industry sectors seem to be attracting pharmacists. The pharmacist workforce distribution by sector in Malta is discussed in the next section. In light of the foregoing, the development of the Maltese pharmachem sector (strategy, policy and higher education initiatives) is presented in Table 23.

Table 23: A Timeline of Strategy, Policy and Higher Education Initiatives: Pharmachem

Year	Institutions, national policies, plans and actions
1960	The Malta Union of Pharmacists was established
1969	Setting up of the Pharmacy Council (Appendix 17)
1974	Pharmamed Ltd. was founded (Malta's only pharmaceutical company)
1977	The three year course of Pharmacy fell in line with the worker-student scheme 1976-1979
1981	The Chamber of Pharmacists began offering continuing education courses
1984	The Bachelor of Pharmacy degree becomes an honours degree (4 years)
1992	General Elections
1996	General Elections; Malta College of Pharmacy Practice was founded
1998	General Elections (Leader and Prime Minister resigns)
2000	Patents and Designs Act XVII, chapter 417
2001	Pharmamed Ltd was acquired by Actavis (Malta) Ltd
2003	Setting up of the Medicines Authority (MA) with functions delegated through the Licensing Authority. The enactment of Public Health Act XIII cap 465; Medicines Act, Cap 458; Health Care Professions Act XII. Malta recognised the Roche-Bolar Provision
2004	Joined the EU
2005	A number of pharmaceutical companies set up in Malta, e.g. Starpharma
2007	Part of the EU GMP Mutual Recognition Agreement (MRA); Medicines (Marketing Authorisation) Regulations
2008	Joined the Eurozone; The setting up of the Pharmacy of Your Choice (POYC); A number of pharmaceutical companies were set up, e.g. Aurobindo APL Swift Services (Malta) Ltd
2010	A number of pharmaceutical companies set up in Malta; The University's degree portfolio in pharmacy and chemistry rose to nine programmes, of which five are graduate courses
2011	Master of Science in Chemistry (FT 1 year by research); Bachelor of Science (honours) in Pharmaceutical Science; Bachelor of Science (honours) in Pharmaceutical Technology
2013	General Elections
2014	Doctorate in Pharmacy (Pharm D.) offered by the University of Malta and Illinois in Chicago
2015	MCAST degree in Chemical Technology; Aurobindo expanded its operations

Source: researcher's compilation and design, 2016

7.3 The Labour Market for Pharmachem Graduates

The Maltese pharmaceutical sector has a high standard of specialists who exceed European requirements, ranking high in terms of health levels and overall health system performance (World Health Report, 2007). Pharmaceutical companies employ 2,118 full-time workers (1,464 employees directly in pharmaceutical production) (NSO Statistics, 2015). These mainly comprise skilled graduates holding one or more of the designated degrees of M. Pharmacy, Pharmaceutical Science, Chemistry, Pharmaceutical Technology as well as the MCAST B.Sc. (honours) course in Chemical Technology, Diplomas in Applied Science and Pharmacy Technician graduates. A B.Sc. (honours) Chemical Technology commenced in 2015, with limited statistics currently available.

There are 1,392 qualified Pharmacists (Pharmacists' Register, 23 August, 2016) registered with the Pharmacy Council and are increasing on an annual basis. Table 24 shows figures for individuals who are licensed to practise as pharmacists.

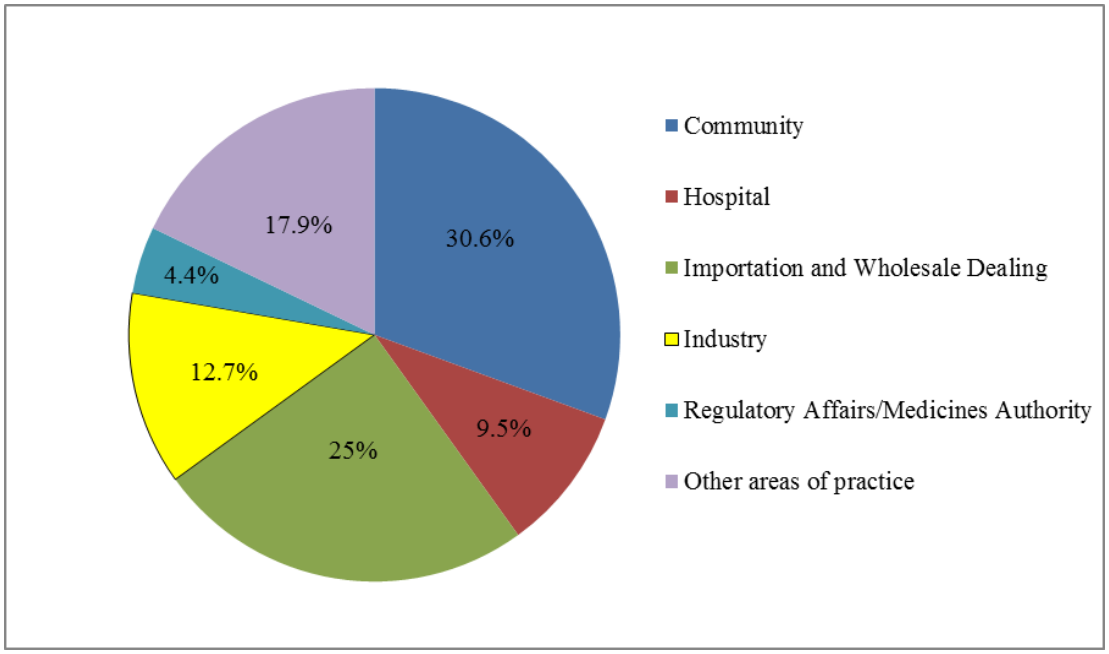
Table 24: The number of registered and licensed pharmacists in Malta

2010	2011	2012	2013	2014	2015
685	613	497	935	787	733

Source: Pharmacy Council Annual Reports, 2010-2015

The University of Malta's pharmaceutical science course predominantly focuses on community and clinical aspects, directing students to community pharmacy and hospital pharmacy as favourable career choices. The Pharmacy Council collects data for nine pharmaceutical groups by employment sectors in Malta (Table 22). This shows the flexibility of pharmacists' roles, the wide range of sectors in which they work and the range of duties they perform (Appendix 20). *"Pharmacy is a diverse profession. It is fragmented and is versatile as a degree. You can do a lot with Pharmacy"* (PHR15). Pharmacists are not a uniform group of individuals who practise in similar settings. 'Industrial' pharmacists are considered non-traditional (i.e. not involved in direct patient care). *"They are marketable and can pursue different avenues"* (PHR08).

Figure 24: Distribution of the Pharmacy Workforce in Malta 2014



Source: Pharmacy Council statistics, 2015

The data in Figure 24 reveal that 30.6% of full-time registered pharmacists are employed in community pharmacies followed by 25% in importation and wholesale, generally, as Responsible Persons[47] or medical representatives. Roles in importation and wholesale appear to be attractive options to pharmacists locally, although this trend is not in line with the international workforce scene, where many registered pharmacists work in the community, industry and hospital sectors (FIP, 2012). Many pharmacists choose to work as medical representatives, because it is lucrative. *"I think the role of the medical representative does not need to be a pharmacist. An advanced level standard of education in sciences should be sufficient, because the representative is promoting something which already exists"* (PHR03). The other areas of practice include 9.9% hospital pharmacists, 4.4% pharmacists working with the Medicines Authority (the regulator) and 12.7% work in the pharmaceutical industry (Appendix 21). *"Bringing pharmacists into industry is hard"* (PHR03). There are more female than male pharmacists in the workforce, in all areas of practice (Table 25).

[47]A Responsible Person (RP) is a person registered as a pharmacist with the Pharmacy Council and recognised as suitable by the Medicines Authority. Available from: http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=11275&l=1 [Accessed 12/09/2016].

Table 25: Distribution of the pharmacy workforce 2014 according to gender

Pharmacists' areas of practice (in full-time employment)	Male	Female	Total
Community	72	152	224
Hospital	29	41	70
Importation and Wholesale Dealing	82	101	183
Industry	**42**	**51**	**93**
Regulatory Affairs/Medicines Authority	12	20	32
Other areas of practice (Out of the 131, 27 - Teaching 17 - Academics 35 - Medical Procurement 19 - Pharmaceutical policy 12 - Research The remaining work in other areas of practice.	45	86	131

Source: Pharmacy Council Annual Report, 2015

For the purpose of this research, the graduates employed in pharmaceutical manufacturing industry are being considered. Their role is to discover, evaluate and manufacture medications. The WHO, (1997), has "emphasised the importance of the pharmacists' role in pharmaceutical companies and indicated that without it, the company should not be allowed to operate." In Germany, qualified employees in the pharmaceutical industry must also be well-trained pharmacists in the field as there are no other degrees that can adequately cover their work responsibilities (Atkinson et al., 2012). This is not the case in Malta in that the B.Sc. (honours) Chemistry graduates can also occupy some of these roles in pharmaceutical companies. The graduate involvement in therapeutic drugs covers the initial development of new chemical entities, their formulation into medicines as well as their testing, marketing and distribution, i.e. the focus on the preparation and supply of medicines. The EIPG defines the main areas of employment for pharmacists in industry as: research and development, quality assurance and analysis, manufacture, regulatory affairs, clinical trials and pharmacovigilance, marketing and sales and sales training, product/medical information, wholesaling and general management. It should be noted that the division of departments in pharmaceutical companies may vary from one company to another

and some departments can be completely absent in smaller scale companies. These roles are further discussed in the next section.

The B.Sc. (honours) Chemistry graduates within the Faculty of Science are also sought after by pharmaceutical industries and are generally employed in their laboratories. Since these graduates are not a profession, no council or institute exists to monitor their development or employment opportunities. However, statistical data from the University of Malta reveal how many graduates have qualified with a B.Sc. honours qualification (Table 26).

Table 26: The number of B.Sc. (honours) Chemistry graduates

	2011	**2012**	**2013**	**2014**	**2015**
The first cohort of students graduated in 2011	4	8	7	9	12

Source: University of Malta, 2016

Whether these Chemistry graduates have entered the labour market or continued to pursue further studies is not known. However, the pharmaceutical companies are continually demanding skilled graduates and would employ them immediately if they were available on the market. *"A pharmaceutical company's CEO said that graduates attend an interview and ask what is on offer, because they would have already been told the salary terms of another company. It is a students' market* (PHR10). There is a short supply of local talent. The industry, based on an initiative by the MCCEI, requested the University to help address this issue.

In response to the lack of skilled graduates, the University of Malta developed a Bachelor of Science in Pharmaceutical Technology programme offered by the Department of Pharmacy within the Faculty of Medicine and Surgery, in 2011. This action was in response to the shortage of talent in the pharmaceutical labour market. With the collaboration of the pharmaceutical industry, the course was designed to address their skills gaps. It prepares graduates in the areas of quality control, quality assurance, manufacturing, research and development, wholesale and drug distribution processes. *"It was set up to attract students who are already focused on what they want to do, namely, orient towards the industrial field"* (PHR09). These graduates are not recognised as a profession and statistical data of areas of employment are officially

unavailable. However, University of Malta statistics show the number of students graduating in Pharmaceutical Technology annually (Table 27), which gives an indication of the number of technologists available in the labour market.

Table 27: The number of B.Sc. Pharmaceutical Technology (honours) graduates

	2013	**2014**	**2015**	**2016**
The first cohort of students graduated in 2014	/	3	7	9

Source: University of Malta, 2016

The pharmaceutical industries identified a skills gap in their workforce where pharmacists and analysts needed to be *"supported and relieved from mundane and routine tasks"* (PHR15), such as washing, basic packaging and stock control, so as to be able to focus on the more creative work. *"These were viewed as pharmacy assistants"* (PHR15). As a result, the Medicines Authority together with MCAST collaborated to devise two new diploma courses of Applied Sciences and Pharmacy Technician. MCAST Pharmacy Technician graduates need to be registered and licensed with the Pharmacy Council. The distribution of these graduates in the labour market is shown in Table 28.

Table 28: Pharmacy Technician workforce 2015

Area of Practice (pharmacy technicians in full-time employment)	**Total**	**Male**	**Female**
Pharmacy technicians working in community	31	13	18
Pharmacy technicians in hospital	40	24	16
Importation and wholesale dealing	7	6	1
Industry	**2**	**1**	**1**
Procurement and stores	41	17	24
Other areas of practice	24	6	18

Source: Pharmacy Council Annual Report, 2015

The data above are based on information given by the pharmacy technicians who renewed their Council registration. There are 145 technicians on the island and about 66 who have not informed the Council of their area of practice (Annual Report, 2015). Whilst the number of pharmacy technicians in industry is very small, as shown in Table

28 it may not be a reflection of the actual number of technicians employed with pharmaceutical companies. The pharmaceutical industry is manning their companies with various types of qualified graduates at different levels within the organisation. Some may even been vying for similar posts.

Table 29 shows that there are more female than male graduates of B.Sc. Pharmaceutical Science, which is traditionally the norm. The B.Sc. Pharmaceutical Technology (honours) seems to indicate a similar trend; however the course is too 'new' to be able to provide conclusive evidence. B.Sc. (honours) Chemistry graduates show a balance of female and male graduates.

Table 29: University graduates 2011-2015 by gender

University of Malta	**Faculty of Medicine and Surgery**		**Faculty of Medicine and Surgery**		**Faculty of Science**	
Year	B.Sc. (honours) Pharmaceutical Science		B.Sc. (honours) Pharmaceutical Technology*		B.Sc. (honours) Chemistry	
	F	M	F	M	F	M
2010/1	33	4	/	/	1	3
2011/2	20	10	/	/	4	4
2012/3	25	8	/	/	3	4
2013/4	34	7	1	2	5	4
2014/5	23	17	5	2	6	6

Source: University statistics, 2015

**These are the first cohort of graduates who qualified in B.Sc. (honours) Pharmaceutical Technology. This degree was launched in 2011.*

Every year the number of these graduates has increased steadily, therefore adding to the talent pool for the pharmaceutical industry. The MCAST diploma course in applied sciences has tended to attract more men than women and the opposite is found in the technician course during the last two years (MCAST website, 2015).

7.4 Skills Demands and Employability Discourses

Skills Demands

The rapid changes in the pharmaceutical industry have been exerting pressure on pharmacy, technology and science education and training to provide the required skill sets. This challenging industry employs a broad range of specialist skill sets across all scientific and commercial disciplines and needs to ensure that the right talent is in the appropriate places. Newly graduated 'industrial' pharmacists and scientists are typically employed in a 'pharmaceutical environment' (such as pharmaceutical technology and regulatory affairs) or other work in more 'generic' environments (such as management or quality assurance). The usual entry points for novel graduates include: analysts, officers in regulatory affairs production managers, quality assurance inspectors and managers. These graduates work "in medicines manufacture, import and quality assurance, and areas of work related to making and supplying medicines" (Elvey et al., 2013b, p.185). They develop new medicines in laboratories alongside chemists "suggesting that being a scientist is key to being a professional in industry" (Elvey et al., 2013b, p.185).

These companies engage pharmacists, technologists and scientists in specialised areas, which are generally technical, technical support or commercial (Tables 30 and 31). "Many new graduates entering industry choose a post where the skills and knowledge are of direct relevance and value" (Ecclestone, 1998, p.304). These include research, formulation development, quality control and production.

Table 30: Roles and functions of new pharmachem graduates

Area	Function	Role
Technical	• Research • Development • Production • Quality control	• Discovery and design of new drugs • Formulation of final product • Manufacture and packaging of medicines • Testing of processes and products

Source: Extract from Ecclestone, 1998

Graduates who have gained some experience in the field and confidence in these companies, may choose to move on to specialise in an industrial function, such as

production, regulatory affairs, clinical trials management or quality assurance. Some venture into the commercial arms of pharmaceutical companies.

Table 31: Roles and functions of more experienced pharmachem graduates

Area	Function	Role
Technical support	• Product registration • Regulatory affairs • Medical information • Clinical trials	• Registration with licensing authority • Ongoing safety monitoring • Support to health professionals • Management of study protocols
Commercial	• Wholesaling • Distribution • Marketing • Sales	• Ensuring effective distribution processes • Maintaining adequate supplies • Bringing to consumers' attention • Maintaining competitiveness

Source: Extract from Ecclestone, 1998

One position is pivotal to the pharmaceutical manufacturing process: the Qualified Person (QP) who is entrusted by law (EU directive), with the final release of a pharmaceutical product before shipping to its destination (Appendix 23). *"The concept of a QP only exists in Europe. This position doesn't exist in the USA"* (PHR03). The QP is "permanently and continuously at the disposal of the holder of the manufacturer' licence" (Medicines Act, 2003 S.L 458.36, article 8). The Pharmacy Council maintains a Qualified Persons' Register. The number on the EU list in Malta is 64 (Pharmacy Council's Annual Report, 2015, p.13).

When a drug has been manufactured and has entered Europe, it is tested in European facilities before it is placed on the market. *"For it to be sold on the market, it must be released by the Qualified Person"* (PHR03). *"The QP has a huge personal responsibility for releasing medicines on the market and would be personally liable if something goes wrong"* (PHR03). A QP needs to be licensed and authorised by the Medicines Authority in Malta by carrying out a formal assessment to ascertain the candidate's suitability for this role. "In some EU member states, such as Germany, only those with a pharmacy degree meet the requirements set down in the qualified persons' directive" (Atkinson et al., 2016, p.10). This is not the case in Malta. A B.Sc. (honours) Chemistry degree, a Postgraduate Diploma in Pharmacotoxicology (Appendix 22) two years' relevant work experience in Industry and an in-depth interview held by

the regulator would fulfil the requirements for a scientist to become a Qualified Person (QP). *"The graduate has to be listed with the company"* (PHR01). The high level of technology and the very sensitive nature of the pharmaceutical products call for a certain level of expertise and a good working knowledge of GMP.

Pharmaceutical companies are often faced with a shortage of QPs. *"A QP needs a number of years' experience within industry and a vast knowledge of various techniques"* (PHR01). To address this skill gap, eligible graduates have been trained to become QPs. Although they now have QP status, they are not necessarily working as such at the moment. *"We need a pool of QPs in the event of restructuring or resignation. We know our trends for the next three years and what our order book looks like and we need to sustain that"* (PHR01).

Other full time key positions found in pharmaceutical manufacturing companies include Head of Production, Head of Quality Control and in larger organisations, Head of Quality Assurance (Appendix 23). Manufacturing companies find it difficult to fill positions with local talent, because they are in short supply. *"I would love to employ Maltese graduates, because they are less costly, dependable, and available"* (PHR07). Foreign skills are sourced from their mother companies to address this shortage. *"The Italian system is different than the one we are used to. They are all graduates mainly in Chemistry. One of the five Italian analysts is a British graduate"* (PHR02).

In an effort to address these skills demands, the pharmaceutical companies offer placements to chemistry, pharmacy and pharmaceutical technology students to gain some work experience and exposure to a work environment. During their university course *"the chemistry students carry out a voluntary placement where their work is assessed on good laboratory practice, report writing and interpersonal skills by their project supervisor and the coordinator"* (PHR10).

B.Sc. (honours) Pharmaceutical Science students are expected to carry out compulsory placements in a community and hospital pharmacy. However, the La Laguna Document states that "alternative training should be considered in other related fields of Pharmacy such as Industrial pharmacy" (Directive 85/432/CEE). This type of placement has been included in the M. Pharmacy degree in Malta. Pharmaceutical technology students carry out annual compulsory internships as part of their course requirements. MCAST

students undergo a compulsory apprenticeship as part of their Diplomas in Applied Science and Pharmacy Technician.

Employability Discourses

Pharmaceutical companies are constantly aware of the rise in costs. In the past, pharmacists were employed to fill the pharmaceutical posts. *"I used to employ pharmacists, but over the years, I found that I really needed chemists. I found pharmacists to be rigid"* (PHR04). The absence of graduates reading for other relevant courses gave the industry no choice but to employ pharmacists. *"These pharmacists were paid more than the chemistry graduates, because they were licensed. They were employed as second level analysts of the organisation's hierarchy, unlike the chemistry graduates, who were employed as first level analysts"* (PHR11). In the past, the pharmacy course did not prepare graduates for the 'industrial' world and there was a shortage in the labour market. Twelve out of the eighteen interlocutors claimed that the pharmacy course did not orientate students towards a career in industry. *"We do not manage to hone people into industry"* (PHR04). The main focus of the pharmacy qualification relates to competencies in manning and managing a pharmacy. *"They now learn more about drugs, chemicals and compositions, where they can 'fit' in this industry as well. However, their licence is to manage pharmacies"* (PHR12). The Chemistry Department has recently "*been approached by a pharmaceutical company to recruit chemistry graduates, who they find are more suited to their line of business"* (PHR07). This company is manned by foreign graduates and the aim is to replace them by recruiting graduates from the local market.

Fifteen out of the eighteen interlocutors stated that graduates need to be prepared for the different roles and be exposed to industry. They are "not provided with a complete picture of the story of the shift from university life to full time career employment – a transition involving much more than a job search" (Perrone and Vickers, 2003, p.70).

> *"Graduates get a shock when they are assigned to the production department. It would not be what they imagined. They have an impression that quality assurance is just about paper work which it is not only the case. These impressions need to be rectified"* (PHR06).

There seems to be a gap between graduates' expectations and the reality of the pharmaceutical industry. Eleven out of the eighteen interlocutors claimed that they have relayed these issues to the University informally. *"There is no official University forum to share our views, but since some academics are our QPs we meet regularly on the job and give them feedback"* (PHR06). One of the areas that pharmaceutical manufacturing companies observe is the approach adopted by inspectors employed by the Medicines Authority. Every two years, an inspection is carried out to view documentation, carry out company walkabouts and assess the physical environment. Inspectors have the legal power to grant, suspend or withdraw manufacturing licences. *"We see the difference between the inspectors of ten years ago and those of today. Their approach is different, especially if they had previous industry experience"* (PHR06).

Whilst there is a great demand for talent, the courses do not seem to be producing enough graduates interested in working for pharmaceutical companies. The industry claims there is a shortage of skilled personnel. Yet, one of the interviewees stated that there is no shortage of supply of pharmacists in Malta. *"If you compare Malta to the rest of the world, we rank third in producing pharmacy graduates"* (PHR09). There could be several reasons for this diverse view. There may be a danger of oversupply of pharmacists in the community world. The pharmacy course may not be sufficiently oriented towards the pharmaceutical industry. That is, the students would have learnt the academic theory but would not have been exposed to industry experts' knowledge and practices. "Although academics are actively involved in research, fewer are involved in the drug industry" (Atkinson et al., 2016). If industry insights are not shared by pharmaceutical practitioners with prospective graduates, this may lead to a potential skill mismatch between the recent graduates and the professional requirements in industry. *"We can send our QP to explain audits carried out in India or China so that the students can understand what the work involves"* (PHR03).

The B.Sc. Pharmaceutical Technology (honours) is geared towards preparing graduates for an industry career. It has been designed to ensure that students learn the key roles and functions of industry and experience internships over their three year degree course. The MCCEI has provided feedback on the course curriculum. The study units focus on subject areas related to pharmaceutical companies and their experiential placements occur in an industrial environment. The University has made attempts to promote this

course, resulting in an increase in student enrolments. In fact, the entry requirements are lower than those for the pharmacy course and this may have contributed to the increase in student numbers. However, student numbers substantially decreased over the three academic years, leading to fewer students graduating with a B.Sc. Pharmaceutical Technology (honours). A similar trend has been experienced with B.Sc. (honours) Chemistry students, with fewer graduating.

These low graduate numbers may be due to a number of reasons. The courses might not meet the students' expectations, the study units may prove to be difficult, failing subjects could imply leaving the course programme or students choose to resit their Advanced level examinations to improve their grades in order to enrol on another University course.

Industrial placements offered to these different University cohorts support their learning, proving beneficial to the students and in turn, to the employers. *"It gives us the opportunity to assess the students' performance, the way they behave, communicate, what attitude they adopt in our environment"* (PHR05). However, some problematic issues have been encountered. The placement is not long enough for the students to learn the methods and use equipment properly. During a placement, students watch experienced analysts using technical equipment and learn. "*For a person to use the expensive equipment to carry out an analysis, they would need prerequisite training. This can take up to three months"* (PHR03). Pharmaceutical companies are very strict as to who can use the equipment. *"I am bound by legal documentation. We would be penalised by the auditors, if we let students use the equipment without initial training"* (PHR02). This suggests that there needs to be more coordination between the academic and practitioner to provide a more meaningful experience.

The interviewees were asked the reason why they [the pharmaceutical companies] did not offer students a contractual employment agreement directly, similar to what the audit firms do with accountancy students, so that they would gain more work experience, skills and be better prepared for full time employment on completion of their studies. *"We're forbidden. We cannot give out contracts, but can only offer placements"* (PHR03). Employers seem to tread warily when expressing their concerns with the University directly so as to avoid any misunderstandings, especially when they

need a supply of graduates. This could imply that there are underlying power tensions and struggles between the University and pharmaceutical employers.

Other challenges that pharmaceutical companies face are related to their image and graduates' perception of these companies. Pharmaceutical companies do not market their company brand. There is no robust evidence of the so-called 'frenetic advertising' (Earl-Slater 1997). *"When you think of pharmacy, industry does not come to mind"* (PHR15). These companies post recruitment adverts in the press when required and circulate job openings to students through the Department of Pharmacy.

Newly qualified pharmacists may *"perceive their preparedness and actual preparedness for pharmacy practice might not be the same"* (PHR05). They also seem to have this view that their role is not to work in the laboratory as they claim it does not match their achievements. One interviewee quoted what pharmacists have stated. *"I didn't spend four years studying at University to work in a laboratory"* (PHR03). There could be a historical reason for such a statement. Pharmacists would generally be employed with Government's pharmacies, the Medicines Authority, community pharmacies or assume the role of medical representatives involving dispensing, regulatory and 'clients' facing activities. Graduates have not been exposed to working in laboratories sufficiently and could have possibly only gained some experience during their industrial placements. *"The University of Malta reaches out to companies on their own initiative and asks them to take on student placements*" (PHR08). They, as scientists, may perceive themselves to be applying their scientific knowledge "in the supply of medicines and intellectually … as advisers on medicines" (Elvey et al., 2013a, p.322).

"In the EU, the 1985 EU directive on the profession of pharmacy and the 2013 update, do not recognise any specialisation in pharmacy related to the industry" (Atkinson et al., 2016) (although these are recognised in medicine). Most graduates in *'industrial'* pharmacy go on to work in an industrial setting. In some European countries the status of the industrial pharmacist is officially recognised. In France, the profession of "*industrial pharmacist*" is defined by national law and the statutes of the pharmacy professional body, but on a general European and national level, this is not the case. To assist in labour mobility of pharmacists, the Directorate General, Internal Market and Services of the European Commission launched a European professional card for

pharmacists and other professions in recognition of their professional qualifications overseas, which is being implemented by the Pharmacy Council.

The cornerstone of the pharmacist's professional status and the science graduates is educational attainment. Pharmaceutical companies give value to graduates who are skilled in these related areas of discipline needed for their organisation. Employers use educational qualifications in locating graduates, which gives them the opportunity to display their abilities (Jarvis, 1983). It seems that licensed pharmacists are employed in particular positions, such as quality assurance managers or QPs, in preference to B.Sc. (honours) Chemistry graduates, who can also become QPs.

The degree courses B.Sc. (honours) Pharmaceutical Science leading to a Master of Pharmacy, B.Sc. Pharmaceutical Technology (honours), B.Sc. (honours) Chemistry and B.Sc. (honours) Chemical Technology (the latter is offered by MCAST) are preparing students for pharmaceutical industry and these graduates seem to be competing for similar posts (Appendix 24). When employers were asked if they were familiar with the content of these academic courses, four out of eight employer interviewees claimed that they had adequate knowledge of the pharmacy and chemistry courses, but were not familiar with the B.Sc. Pharmaceutical Technology honours programme and even less so regarding the Chemical Technology course. *"At times it may be confusing but when we interview a graduate, we inquire what academic knowledge they learnt"* (PHR06). *"The pharmaceutical industries do not really make a distinction between the courses as long as they have a chemistry component"* (PHR08). All these courses give the students choices and opportunities. One interviewee was unclear as to *"the actual role and position of pharmaceutical technologists"* (PHR13). Since the inception of this course, little is yet known as to the outcomes of these graduates' skills and knowledge, how they perform and where they 'fit' within a pharmaceutical company.

Employers assume that graduates have the solid academic background and non-technical skills needed to perform during their industrial employment. Non-technical skills are also sought after by these companies, such as good communication, team working and problem-solving, disciplinary skills. In fact, the B.Sc. Pharmaceutical Technology (honours) degree offers two study units, namely, Career and Personal

Development[48] and Communication in Pharmacy,[49] which are concerned with *"an introduction to the world of work"* (University of Malta website, 2016). One of the interviewees stated these non-technical skills are embedded in courses and during work placements, but students are not directly assessed on particular skills. *"When the students present their scientific reports we are indirectly assessing them"* (PHR09). Another interviewee highlighted the fact that *"focusing on generic skills must not be at the cost of academic training. Otherwise we would not be producing professionals, but technicians"* (PHR15).

The University of Malta advocates the broader cross-disciplinary knowledge and skills needed in order to have versatility for employment. *"We help the students in their writing skills through their annual pharmacy projects, develop them to critical think before taking informed decisions and teach them to be ethically responsible"* (PHR09). Graduates need to be flexible and utilise their degrees for different roles, which is a concept linked to policy. *"I know a Pharmacy graduate who works in an IT company. He has linked his pharmaceutical knowledge with IT"* (PHR15).

Employers have often voiced how pharmacy graduates are assigned to the laboratories and are unfamiliar with the most basic apparatus. *"We have to go back to basics in terms of operation and regulation"* (PHR04). The Chemistry graduates on the other hand, are viewed at the other end of the spectrum. *"Their course focuses on a lot of theory and the size of the product, but not on getting their hands dirty"* (PHR04). Employers' overall view is "that *graduates are not prepared for industry or for real life"* (PHR04). Pharmachem companies tend to want graduates with 'ready-packaged' skills and slotted into a specific role.

Employers have interviewed graduates, who have studied in Malta and those who have read for their degree abroad and have the noted the difference. *"Those who have studied abroad seem to have an idea of what the job would entail and know how to market themselves. Those who studied locally give you a blank look and do not have the foggiest idea"* (PHR08). Employers view MCAST graduates differently. They consider them to be more oriented towards the laboratory environment. *"An MCAST analyst is much more comfortable with laboratory practices than a University*

[48]Available from: http://www.um.edu.mt/ms/studyunit/PHR1606 [Accessed 17/09/2016].
[49]Available from: http://www.um.edu.mt/ms/studyunit/PHR1605 [Accessed 17/09/2016].

graduate" (PHR02). The industry looks for graduates who are not viewing employment just as a means to earn a salary only, but rather to help develop the industry and be committed to it. *"A graduate must demonstrate a willingness to engage, show potential and ownership of their work and job"* (PRA11).

Pharmaceutical industries acknowledge that the University cannot fully prepare students for the industrial environment. Graduates are technically knowledgeable but lack industry experience. *"In reality, I think the onus is on industry to invest time and energy in training new graduates"* (PHR04). Thirteen out of the eighteen interlocutors claimed that there is not enough synergy and collaboration among the institutional actors. One of the roles of ME is to attract FDI to contribute to the economy and in turn, create employment. *"I recently attended an overseas seminar and Malta was described as the best kept secret in Europe. My heart sank"* (PHR03). This implied that many overseas pharmaceutical companies are not aware of the favourable conditions Malta has to offer. *"The country has good foundations, good education institutions, a solid financial system, Jobsplus and more, but they do not gel them enough"* (PHR03). This lack of collaboration affects opportunities. *"ME is not service oriented. It needs to reach out and be more customer centric"* (PHR03).

Pharmaceutical industries are not formally represented by the MCCEI. Moreover, the people involved in representing the pharmaceutical market do not have any experience in this industry. *"They cannot effectively represent the requirements of this industry. Our reality is unlike wholesale and importer companies. We view the market differently"* (PHR04). *"Predominantly through legacy, this industry was mainly composed of importers and not the manufacturing industry"* (PHR03).

This lack of linkage is also reflected in the approach towards student placements. Four out of the eight pharmaceutical companies have minimal links with HEIs. The workload and deadlines are tight and little time is spared to teach students who are not prospective employees. *"It is hectic and stressful and in the end we would delegate the students paper work"* (PHR02). In sum, these activities were not considered fruitful and these companies decided not to continue offering student industrial placements.

In carrying out a thematic analysis of the in-depth interviews, twelve themes emerged from the interview data as explained in the previous study. These themes were used to organise the analysis of the data connected with each case study including pharmachem.

Even though there was commonality in the thematic issues, each of the institutional actors in the pharmachem field tended to focus on and discuss some more than others giving emphasis and importance (Table 32).

Table 32: Thematic Table of institutional actors related to the Pharmachem field

Themes	Government	Higher Education Institutions	Professional Associations	Employers
Use of different language	✓	✓	✓	✓
The meaning of employability	✓	✓	✓	✓
The value of credentials	✓	✓	✓	✓
The role of the University	✓	✓	✓	✓
Perceptions	✓	✓	✓	✓
Expectations	✓	✓	×	✓
Competitiveness	×	✓	✓	✓
Modes of training provision	×	✓	×	×
Labour mobility	×	×	×	×
Placements and Incentives	✓	✓	✓	✓
Synergy and Collaboration	✓	✓	✓	✓
Skills gaps	✓	✓	✓	✓

Source: researcher's analysis, compilation and design, 2016

Pharmachem employers focus on ten themes except modes of training provision and labour mobility. HEIs do not emphasise labour mobility. Professional associations emphasise the use of different language, the meaning of employability, the value of credentials, the role of the university, perceptions, placements and incentives, synergy and collaboration and skills gaps. Less emphasis is given to competitiveness, modes of training provision and labour mobility by the Government. An explanation of these

themes can be found in the roles and interests of the institutional actors after having considered the principal themes in the discourses employed by them in this field.

7.5 Institutional Actors and policy–making

In 1977, the three year course of pharmacy 1976-1979 fell in line with the student worker scheme and was adapted to provide students with some practical application. Skills gaps existed in the health care system and administration. The Government required hospital pharmacists and technologists. In the national interest, it was proposed that wholesale/retail industry needed more qualified personnel to supervise professionally the distribution and marketing of drugs in order to manage and monitor the propensity of drug usage or abuse. In industry, there was a great need for technologists (biology/chemistry), where product control and quality were a management concern. It was proposed that the B. Pharmacy course should be reorganised "to cover the needs of the pharmaceutical and technological nature for industrial purposes" (Sant et al., 1981, p.11). There were two major public policy concerns in relation to this course at the time. The pharmacy graduates were perceived as glorified shopkeepers, dispensing medicines from retail outlets, which could be carried out by less qualified personnel. That is, the pharmacy students were working in community pharmacies as part of the worker-student sponsorship catering for marginal interests. It was being questioned whether the B. Pharmacy course had any relevance to the needs of industry.

A policy decision was taken to close the Faculty of Sciences deeming it as not economically viable for Malta and adopting a rigid utilitarian approach caused graduate skills gaps. Such a decision was to the detriment of industry, especially to pharmaceutical manufacturing companies needing science graduates. Instead, pharmacists were employed to meet their requirements. The science degree courses were eventually reintroduced and to date, do not produce enough graduates that meet the industry's needs. In the 1990s and early 2000s, there was no evidence of any major educational developments that occurred in the science field. It was a period of stasis.

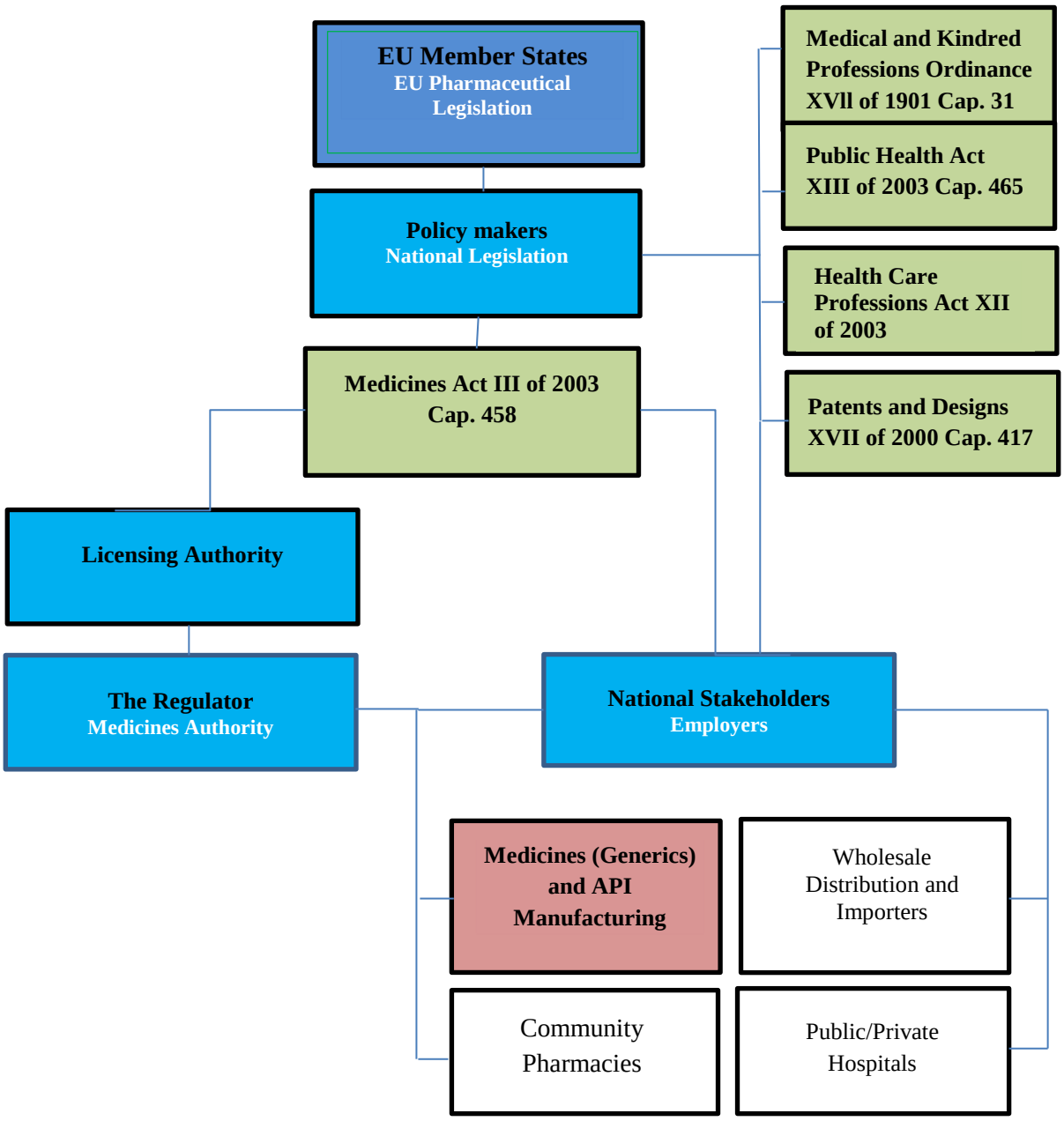
Upon Malta's EU accession in 2004, a number of pharmaceutical manufacturing policy developments took place. The new regulations either changed many policies or highlighted the need for action and change. The EU's binding policy initiatives

included national prices, profit and reimbursement, rational use and advertising; free movement and competition issues and, market access through harmonisation and eventual centralised authorisation procedures through the European Agency for the evaluation of medicinal products (EMEA). More specifically, EU legislation regarding GMP, importation and parallel importation, marketing authorisations, packaging and labelling, wholesale distribution, reimbursement and selection of medicines, clinical trials, pharmacovigilance and advertising had to be transposed into the Maltese legislation.

Agreement was required from all the key players, whose economic, social and political motives differed, making the implementation of regulation challenging. Pharmacists, doctors, the Government and the pharmaceutical industry wanted the regulatory system to be efficient, transparent and robust and to make decisions based on sound scientific evidence. EU accession on the pharmaceutical industry "triggered actions and reactions from the main institutional actors. These included the Malta Chamber of Pharmacists, MCCEI, and the GRTU" (Bugeja, 2008, p.35).

The national pharmaceutical sector is regulated by the laws highlighted in Figure 25. The Medicines Act 2003 stipulates that the Superintendence of Public Health is the Licensing Authority and gives direction to the directorates to ensure that the regulatory functions are properly discharged. The Superintendent of Public Health assists and advises the Ministry on the formulation of regulations and standards through the Directorate of Pharmaceutical Affairs and ensures that they are implemented by both state and private service providers. It monitors standards, issues licenses and carries out health care inspections. Enforcement regulations are delegated to the Medicines Authority, also being responsible for ensuring that all public health legislation is upheld.

Figure 25: The National Pharmaceutical Framework

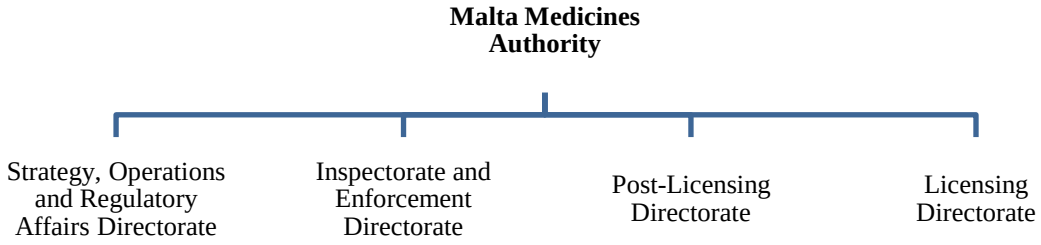


Source: researcher's analysis, compilation and design, 2016

A number of the Licensing Authority's functions are delegated to the Medicines Authority (MA) which establishes standards to ensure the quality, safety and efficacy of medicinal products in relation to their manufacturing, preparation, assembly, packaging, repackaging, relabelling or any other substance that is used or is intended to be used in such products. The national stakeholders, which include the medicines (generics) and API manufacturing, are regulated by the Medicines Act, 2003 and other legislation.

The Medicines Authority is divided into four directorates, namely, Strategy, Operations and Regulatory Affairs Directorate, Inspectorate and Enforcement Directorate, Post-Licensing Directorate and the Licensing Directorate (Figure 26).

Figure 26: Malta Medicines Directorate



Source: researcher's compilation and design, 2016

The Authority issues licences to companies and Qualified Persons working in the pharmaceutical industry providing they meet specific criteria according to the EU directives 2003/94/EC and 2001/83/EC (Human), respectively. In some EU member states, such as Germany, only those with a pharmacy degree meet the requirements set down in the Qualified Persons directive. "The Pharmacy profession is regulated by the Council in the interests of the general public" (HCPA, 2003, part III, 15). A register of persons is kept and maintained by the Council, which has established a code of conduct and carries out disciplinary procedures where necessary.

Graduates with a pharmacy degree are employed in a variety of positions, the most important (in terms of numbers) being community, hospital and industrial pharmacies. The discussion on whether these three domains require specific skills with a specific education has long been a contentious debate. One of the interviewees employed in the Directorate of Pharmaceutical Affairs (DPA) contended that pharmacists are only taught the technical knowledge related to pharmacy. *"They lack skills in pharmaceutical policy, accounting knowledge, budgetary control and health economics. These are relevant to budget impacts and quality assurance"* (PHR18). Reference was made to the Pharm. D. course. This course combines the development and application of advanced clinical pharmacy skills with contextual research. The DPA was not involved in or consulted on the course content since Pharm. D. graduates would be appropriately suited to work in a policy environment. "*I see skills gaps in this professional doctorate. The academics lecturing on this programme do not have the relevant expertise in areas,*

such as health economics and health technology assessments (PHR18). The skills regime is further discussed in the next section.

7.6 Skills Regime

The lack of industrial expertise and gaps in the labour market encouraged a number of the institutional actors, namely, the University of Malta, MCAST, the MCCEI and the pharmaceutical industry to respond by offering taught courses targeting different student cohorts. These include a B.Sc. (honours) Pharmaceutical Science leading to an M. Pharmacy, B.Sc. (honours) Chemistry and a B.Sc. Pharmaceutical Technology (honours) offered by the University of Malta. The B.Sc. (honours) Chemical Technology, Diploma in Applied Sciences and Pharmacy Technician course are offered by MCAST. Another major degree of interest to industrial pharmacists is the three year M.Sc. in Chemistry (full time or part-time by research) offered by the Department of Chemistry, University of Malta which is specifically designed for the pharmaceutical industry. In order to encourage students to enrol for tertiary education related to pharmacy and chemistry, the Government has increased the university stipend entitlement.

These relevant University courses need to include theoretical and practical study on the following subjects in line with the European Union's Directive 2005/36/EC. The B.Sc. (honours) Chemistry degree does not include the following subject areas - toxicology and pharmacognosy in its course contents, which implies that only pharmacists can fill the role of the QP. Since QPs are in short supply in the labour market, the University of Malta responded to this by creating a postgraduate diploma in Pharmacotoxicology (pharmacognosy and toxicology) to address this 'gap' in chemistry graduates' technical learning (Appendix 22). Pharmacists do not require the postgraduate diploma in Pharmacotoxicology as these two subject areas are taught in the M. Pharmacy course content. Both cohorts of students are still required to have two years' work experience and need to be employed with a company.

> *"We have both types of graduates. The B.Sc. (honours) Chemistry graduates take longer to become QPs. There is a wider skill gap, primarily, because some of the modules are missing in their learning processes. With*

> *a B.Sc. (honours) qualification, on the other hand, they are exposed to different areas in the company depending on the department they work in"* (PHR01).

"The chemistry graduates also need to have exposure to other areas, such as regulatory, pharmaceutical techniques, validation and engineering" (PHR01). This fee-paying postgraduate diploma in Pharmacotoxicology is on offer by the university depending on the interest shown. *"To send a number of eligible graduates on this University programme is a costly affair and instead we organised an intensive internal programme"* (PHR01). A pharmacist could have three years' regulatory experience, but no laboratory experience. A B.Sc. (honours) Chemistry graduate would only have laboratory experience. *"From our experience, a pharmacist would find it easier to obtain this qualification since they are better academically prepared"* (PHR01).

The three year B.Sc. Pharmaceutical Technology (honours) offered by the Department of Pharmacy prepares graduates for the pharmaceutical industry in the areas of quality control, quality assurance, manufacturing, research and development, wholesale and drug distribution processes. The course was developed on the initiative of the MCCEI and the Pharmaceutical Industry in Malta. The first cohort of students reading for an MCAST honours degree in Chemical Technology will be graduating at the end of this year. It is still in its infancy.

These courses "strengthen the relationship with the pharmaceutical industry and improve the research and development in the country" (Asiri, 2011). These courses seem to be preparing the students for similar posts causing competition. However, there are some key differences between the B.Sc. (honours) Chemistry and the M. Pharm degree courses. Academically, the B.Sc. (honours) course is broader and less specialised. Non-technical skills are not exercised enough. An elective work placement is offered to Chemistry students. The M. Pharmacy degree (which was built on the B.Sc. (honours) Pharmaceutical science is more specialised. It offers compulsory placements and develops non-technical skills through case studies and presentations.

In the pharmaceutical industry, the B.Sc. (honours) Chemistry is not considered a professional course i.e. the graduates do not need to be registered and licensed to work, are not allowed to handle dangerous drugs, are perceived to be less respected by

pharmaceutical industries, have a vertical career pathway, are paid less and are more focused on industry. M. Pharmacy graduates need to be registered and licensed, can handle dangerous drugs by law, have alternative work pathways, are paid more than other graduates, because they are perceived to be valuable by industry employers and are more marketable than their contemporaries.

B.Sc. (honours) Chemical Technology (level 6) is too new to be able to analyse its effects in the labour market, but was designed not just for pharmaceutical companies, for the course also tackles medicines, drugs and chemicals. However, MCAST's main product is the Diploma in Applied Sciences at level 4. These graduates compete with B.Sc. (Honours) Chemistry cohorts for similar posts. Most pharmaceutical companies have laboratories and a manufacturing process which involves chemicals and they need laboratory technologists. *"Industry can either employ a B.Sc. (honours) Chemistry graduate from the University of Malta (level 6) or a Diploma in Applied Sciences technician (level 4) from MCAST"* (PHR12). This is the skill gap. If the pharmaceutical company has a high level of design modelling and theoretical work, a University degree graduate (at level 6) is ideal. In reality, *"these companies tend employ technicians for two reasons. They are practical, have worked in a laboratory or research setting, at a lower wage"* (PHR12). The diploma course is heavily based on an apprenticeship scheme, which gives the students industrial exposure and experience. *"They got used to working with employers at the apprenticeship level and would be ready to start full-time employment the day after they graduate. They are at a lower level, but they have different and more practical skills"* (PHR12). Employers tend to view *"MCAST students as more loyal than University students even though they have a different mentality, work ethos and behaviour"* (PHR12).

There is little specific pre- or post-graduate training for industrial pharmacists. "Industrial pharmacists are defined by their place of work, their roles and responsibilities" (Ecclestone, 1998, p.304). Some training provision in pharmaceutical companies is carried out by means of on-the-job experience including standard operating procedures (SOPs) and health and safety. There is no formal certification (other than the professional qualification) required to work as a pharmacist in the pharmaceutical industry. Competency-based development is an emerging discourse in pharmacy education unlike accountancy professional associations, which have long adopted CPD.

CPD is an approach to preparing pharmacists for practice oriented towards abilities and competencies. "Competencies can be assembled like building blocks to facilitate development" (Frank et al., 2010). The Malta Pharmacy Council set up a sub-committee to study the possibility of introducing formal CPD requirements for pharmacists and pharmacy technicians to be regulated by the Council on registration, given the growing importance of their role in the pharmaceutical industry.

Both the University and MCAST are represented on this sub-committee, but the Malta College of Pharmacy Practice (MCPP) is not a member. The MCPP is the only autonomous academic institution, which was set up in 1995 "to encourage, foster and maintain the highest possible standards of pharmacy practice in Malta through continuing education, contributing to pharmacists' professional development" (MCPP website, 2016).

On interviewing the MCPP President, I was told that a number of seminars are organised for pharmacists on a voluntary basis. Many pharmacists do not consider these seminars useful. "*Pharmacists do not realise that a lack of knowledge of EU regulations does not exonerate them"* (PHR15). MCPP also liaises with the DPA on training related to public health to elicit their views and possible involvement.

Employers emphasised the importance of teamwork as a valuable means of developing other skills, such as critical thinking, problem-solving and ethical awareness. Six out of the eight industry employers felt that they should be involved in creating real world case studies to be solved in class. "This would involve changes in the curriculum design and teaching practices… possibly invoking resistance from an already pressured academic staff" (Dunne, 2000, p.361). Pharmacists seem to lack of awareness of the importance of non-technical skills. *"They do not understand the concept of such skills. Communication skills, leadership, management skills and teamwork are definitely lacking"* (PHR15). Non-technical skills are the main components that define sustainable success. Training in industry-specific, non-technical skills in pharmaceutical companies is considered as one of the skills gaps. *"They can be excellent analysts or pharmacists, but if during the interview they do not come across as the 'right' fit, we will not employ them"* (PHR01). The *'right'* fit to this company meant that the applicant *"must be in a position to communicate, work as a team and*

have appropriate values, which would reflect their behaviour" (PHR01). These skills gaps appear to persist. This is examined in the next section.

7.7 Skills Gaps

A variety of technical skills and knowledge is considered essential for the pharmachem graduates to be eligible to work in the pharmaceutical industry. The industry looks for the knowledge and academic results first, whereby having a solid scientific background is considered of paramount importance. Industrial regulatory affairs, analytical and pharmaceutical analyses, policies related to pharmaceutical manufacturing, medicinal chemistry, pharmaceutical formulations, development techniques for new drugs, separation techniques are a few of the important technical subject areas that pharmachem graduates are expected to be knowledgeable about and engaged with. *"Formulations are a particular problem; pharmaceutics and pharmaceutical technology skills in graduates tend to be weak"* (PHR05).

In terms of the course curricula, there does not seem to be a study unit on business skills. This could include management skills, legal, tax and finance skills and entrepreneurship. Sixteen out of the eighteen interlocutors claimed that graduates lack management skills, a skill gap seemingly more pronounced in science graduates. *"The chemistry and pharmacy courses are preparing students to become scientists or [industrial] pharmacists and not managers"* (PHR06). This means that graduates qualify in an area of expertise, but do not have the management skills they are expected to have when occupying management positions. "*Analysts cannot run a laboratory, if they do not know how to manage it"* (PHR06). Sixteen out of eighteen interlocutors stated that academics in the Departments of Pharmacy and Chemistry are themselves not trained or qualified in management skills. *"Students should be offered electives in management, finance and other non-technical skills by people who are experts in these fields"* (PHR06).

Seven out of the eight employers claimed that pharmachem graduates have no sense of discipline or the concept of cost savings. *"I often iterate that we are not a charity organisation"* (PHR06). Five interviewees also emphasised that the graduates do not realise that time is money. "*We used to have people wanting to carry out further tests, which were unnecessary. It is a drain on our profits"* (PHR06).

Non-technical skills, such as communication, team-working, problem solving skills, have been highlighted as skills gaps in graduates. Fifteen out of the eighteen interlocutors noted how graduates demonstrate poor writing skills. *"Their written communication leaves much to be desired"* (PHR14). Teamwork is an important skill. *"I look out for team players"* (PHR16). In such a regulated market, pharmaceutical companies impress on their graduates the importance of being ethical and compliant with regulations as unethical behaviour and non-compliance increases this industry's costs. *"Big pharma is all about ethics and compliance"* (PHR16).

What is surprising is the reference to personal qualities and attitudes of graduates working in industry which takes on a new dimension. This included the need to be focused and sharp, meticulous, motivated and dedicated to the work involved. Some 'industrial' pharmacists, apparently, display a negative attitude.

> *"Graduates need to realise that there is a difference between what they learnt and how to practise. Some pharmacists are snobbish towards other graduates in different disciplines. Sometimes they adopt an attitude of 'superiority' and do not realise that that there are other valid people who give their contribution to the company and who are not pharmacists"* (PHR17).

Table 33 highlights a number of skills gaps in technical, intellect and non-technical skills that emerged when recruiting new pharmachem employees.

Table 33: Employers' expectations of technical skills in new pharmachem graduates

Technical skills and Intellect	
Knowledge of the sector	Analytical and critical thinking
Legislative/regulatory knowledge	Organisational skills
Absorb and apply technical knowledge	Work under pressure
Laboratory skills	
Basic mathematical capability	
Computational chemistry	

Source: researcher's analysis, compilation and design, 2016

Fourteen out of the eighteen interlocutors indicated that there is a perceived reduction in the calibre of recent graduates and in particular, pointed to deficiencies in mathematics learning. Moreover, there has been a slow rise in the number of honours degree graduates with pharmachem qualifications alongside an increase in numbers of graduates with lower level qualifications.

The interlocutors were in agreement with the major non-technical skill themes identified. However, they gave importance to each category and emphasised the personal qualities and attitudes of these graduates. Table 34 highlights the critical skills required by pharmachem graduates as perceived by the interviewees. The qualitative findings and types of essential non-technical skills sought by institutional actors are rated in order of perceived importance based on the thematic analysis.

Table 34: Institutional actors' expectations of non-technical skills in new Pharmachem graduates

Non-Technical Skills	Frequency of response			
	Regulator (x2)	**Higher Education Institutions (x4)**	**Professional Associations (x4)**	**Employers (x7)**
Communication skills • effective verbal and written communication • articulate clearly in the English language • to distinguish between the formal and informal approach presentation skills	**2**	**3**	**4**	**8**
Teamwork • flexible • adaptable	**1**	**3**	**4**	**7**
Problem solving	**2**	**2**	**3**	**6**
Commercial/business awareness • can think outside the box • able to see the bigger picture • able to network • knowledge of the sector/market that clients operate in • business skills	**1**	**1**	**3**	**5**
Language skills • spoken English • knowledge of foreign language/s	**1**	**2**	**2**	**4**

Emotional Intelligence
• self-awareness
• social awareness
• self-management
  • planning
  • stress and time management
  • multitasking
	1	**2**	**2**	**5**

Taking Initiative	**1**	**1**	**2**	**5**
Professional ethics	**1**	**2**	**2**	**5**
Personal characteristics or behaviour • attitude • confidence • drive • professional outlook • working independently • personality fit • *'can do'* approach	**1**	**4**	**4**	**6**
Items not formally articulated included creativity, leadership and entrepreneurial skills.				

Source: researcher's analysis, compilation and design, 2016

The top four most important and desired non-technical skills (Table 34) sought by the pharmachem profession include communication skills, team work skills and problem-solving and management skills. They stressed their importance and viewed these critical skills to be the bridge to settling into professional life with colleagues and clients. Fifteen out of the eighteen interviewees also claimed that creativity, leadership skills and entrepreneurial skills are gaps in graduates' learning. These skills are portable and transferable. From these results, they revealed that the institutional actors were in agreement with these skills gaps and stated the importance of developing such skills in graduates. One interviewee also added that graduates *"lack initiative and an inquisitive mind"* (PHR08).

The National employee skills survey, 2016, reported the heightened emphasis on these non-technical skills and their importance in the labour market. The preliminary results (n=671 valid responses),[50] which were highlighted in chapter 6, identified similar skills gaps to this research, therefore, affirming a similar pattern.

7.8 Conclusion

This second case study has examined the pharmachem industry highlighting its complexity for a number of reasons: the segmentation of the industry between originator and generic producers, the extraordinary investment required in research and development and in the manufacturing plant; the complexity of the legal environment, which is influenced by both supranational and national legislation as well as by developments in fields such as health care. The insights on policy making include the effects of a complex legal environment on the content of higher education and training programmes and the fragmented regulatory apparatus, which seems to inhibit rapid innovation in education and training for the profession. These factors created difficult in anticipating the market. Conventional models of economic development are not easily implemented. The Government has behaved opportunistically in terms of development by scanning the external environment, viewing any opportunities and reacting to them. Due to the Bolar provision, the Government acted nimbly by offering financial incentives and infrastructure for pharmaceutical companies to invest in Malta. As a result, highly skilled graduates were in demand. This requirement became HEIs'

[50]NCFHE statistics, 2016. The full report is due to be published.

responsibility. HEIs responded by remodelling the pharmacy courses, creating the B. Pharmaceutical Technology (honours) degree and offering a B.Sc. (honours) degree in Chemistry. As mentioned earlier, pharmaceutical industries are taken over and departments can be closed down or set up overseas. The implications are that highly skilled jobs may be time bound and a premium is placed on quick retraining and a sudden shift in specialisation.

The changing face of pharmacy and science practice has been requiring HEIs to provide the students with the ability to think critically, improve their problem-solving skills and take informed decisions. "Students in pharmaceutical sciences should be encouraged to create, transmit and apply new knowledge, based on cutting edge research" (Toklu and Hussain, 2013, p.38). It is recognised that no university degree programme can teach graduates everything that they will need to know and do throughout their professional careers. However, the development of students' non-technical skills and attitudes are required for students to become self-directed, lifelong learners. The optimum blend of conditions seemed to be the ability to be exposed simultaneously to an industrial environment and academic learning with input from the professional associations.

The University courses could offer interdisciplinary and multidisciplinary skills study units as electives. These might be knowledge special courses dedicated to sector characteristics and non-technical study units, such as management skills. Industry employment involves having to work with foreign graduates where intercultural and language skills need to be strengthened.

Roles in pharmaceutical companies need to be clearly defined, because graduates reading for different degrees are vying for similar positions in industry. Role definitions would assist in addressing workforce shortages and distribution imbalances. Improving information provision on current and future skills and knowledge needs and job requirements are essential for training, education and employment. Students need to be encouraged to develop an affinity for science at an earlier age in their learning. Important subject areas can be integrated into their subjects, such as water chemistry.

The formation of strong national partnerships, supporting education, training by providing benchmarks and sharing best practice solutions would raise the quality of and

standards in the pharmaceutical industry. Collaboration and joint action among the different institutional actors, namely, academia, industry and the regulator have been identified as an important factor for progressing and improving the pharmaceutical human resources by correctly predicting future skills and knowledge needs in an encompassing and timely manner. Moreover, the different approaches, perspectives and sensitivities among the different players in pharmaceutical sciences need to be understood by all stakeholders. *"There has to be that catalyst – a person or entity – whose role is to* [bring the key players together and] *ensure that this gap is bridged"* (PHR03). Building on the strengths of each and every actor, creates a synergy within the array of different disciplines. The challenge to overcome sectoral skills gaps and shortages will be met, if the key actors act in close concert, with sufficient interaction between the national and European levels. "Collaboration is needed on matching future skills demand and supply, in developing learning strategies and in establishing partnerships for innovation, skills and jobs" (van der Zee et al., 2009, p.19).

The analysis of the twelve themes revealed that the four institutional actors emphasised some thematic issues more than others during the interviews. These themes have been discussed throughout the whole case study. A summary of the thematic analysis has been tabulated in Table 35 together with the theoretical definitions of these themes defined in Appendix 1. These findings and analysis of the themes are presented in a similar format so as to be able to draw out similar patterns and inconsistencies emerging from the three case studies.

Table 35: Thematic analysis by pharmachem institutional actors

Themes[51]	Government	Higher Education Institutions (HEIs)	Professional Associations	Employers
The use of different language	Government considers qualifications as the currency for skills.	HEIs prepare graduates to be *"citizens of the world"* (HEI01).	HEIs are to prepare students in preparation for the world of work and in line with the relevant requirements of the country.	*"Graduates would have the knowledge, but they need to learn about the working world"* (PHR06).
The meaning of employability	Employability is referred to "graduate jobs or jobs that graduates do" (Purcell et al., 2003, p.18).	*"Graduates have the technical knowledge and skills and would need to be aligned with the requirements of these companies to give their contribution"* (HEI03).	*"Employability is the ability and suitability of a person to carry out a particular job"* (EMP06).	*"Graduates who match our requirements, have the ability to carry out a particular job, are the right fit in the company and are willing to learn"* (PHR06).
The value of credentials	The regulators (NCFHE and Medicines Authority) ensure that local qualifications are equivalent, comparable and recognised by HEIs in EU member countries.	The more qualified a graduate is, implies better quality and technical knowledge in the discipline.	The pharmacy credentials are given more value, because the profession is regulated, whereas the chemistry graduates are not.	Credentials confirm that the graduates have the technical knowledge in the field. The pharmaceutical industry looks for robust technical competence to work in these companies.
The role of the University	To produce graduates with relevant and recognised qualifications prepared for the labour market so as to obtain earnings.	The purpose of the University is to provide a holistic education; to provide general learning and develop creativity and inquiry in undergraduates. *"It is about creating tomorrow's citizenship and national identity"* (HEI01).	Universities have been encouraged by employers' associations to develop graduate employability skills for the labour market' (Mason et al., 2009).	To prepare pharmachem students to be technically knowledgeable, competent and prepared to work for pharmaceutical companies.
Perceptions	Pharmaceutical companies contribute to the overall GDP and employment. ME's focus of attracting companies to Malta seems to have shifted to other economic areas.	HEIs give students the technical knowledge, but not enough effort is put into linking academia to the manufacturing industry.	The Chamber of Pharmacists focus on status of the pharmacist. MEA's perception on graduates, including chemistry, is to curtail the approach of a culture of entitlement.	The pharmaceutical industries are perceived to be highly dependent on skilled pharmachem graduates mainly because they are highly regulated and subject to auditing.

[51]The theoretical definitions of the twelve themes are found in Appendix 1.

Expectations	Government expects HEIs to produce graduates needed for the pharmachem industry.	Public HEIs expect the Government fund research, infrastructure and administration. They expect employers to contribute financially to their department and offer students industrial placements in preparation for the work place. The pharmacists expect to be licensed by the Medicines Authority. Pharmaceutical Technology graduates are offered employment by the pharmaceutical companies.	Employers expect pharmachem graduates to be prepared for employment.	Employers expect pharmachem graduates to be *"fully qualified and warranted with the technical and legal background required and are ready to learn"* (PHR06).
Competitiveness	/	It is the two University departments themselves that are providers of graduates for the pharmaceutical companies and prepare them to become work ready for industry. These two departments produce similar graduates vying for the same posts in the manufacturing pharmaceutical companies.	Pharmaceutical Technology and BSc (honours) Chemistry graduates are in competition for posts with pharmaceutical companies. Both these type of graduates are not warranted. This means that pharmacy graduates are also sought after by industry.	Competition for the recruitment of skilled pharmacy, pharmaceutical technology and chemistry graduates.
Modes of training provision	/	The pharmacy and pharmaceutical technology courses encourage group work, laboratory work, student presentations, case studies, traineeships and company visits. The chemistry course encourages laboratory work, presentations and team work.	Modes of training provision are in-house training, on–the-job training, conferences and seminars.	Technical training takes place in the form of induction programmes, standard operating procedures training, on-the-job training and overseas training in pharmaceutical companies or their mother company.
Labour mobility	/	/	/	Pharmaceutical companies do not tend to encourage graduate labour mobility due to talent competition.

Placements and incentives	*'Get Qualified'* Scheme helps individuals receive tax credits on training. The Government offers placement opportunities for University students to gain some exposure and work experience in the hospital pharmacies during the summer months of their course.	Placements and traineeships are included as compulsory study units for pharmacy and pharmaceutical technology students as part of the degree requirements. Placements are not compulsory for chemistry students. BSc (Hons) Chemistry and Pharmaceutical Science students receive a higher stipend than pharmaceutical technology students.	Malta Employers Association encourages student placements and supports MCAST in their apprenticeship scheme. The Association also supports the incentive schemes that the Government has introduced related to courses.	Pharmaceutical companies offer M. Pharm, B.Sc. Pharmaceutical Technology (honours) and B.Sc. (honours) Chemistry students undertake work placements during their undergraduate course.
Collaboration	ME collaborates with pharmaceutical companies on the setting-up, incentives and tax credits offered to manufacturing pharmaceutical companies. ETC introduced an employability index for tertiary courses offered by the University on MEA's recommendation.	The University dialogues with pharmaceutical companies and the Medicines Authority. The Authority's CEO is a member of the academic staff at the University. Symposia are organised on an annual basis, with companies sponsoring this event and awarding students on their best dissertations. The Department of Pharmacy communicates any vacancies that may arise to the new graduates. Practitioners are not involved in delivering talks to students.	The Department of Pharmacy collaborates with the Chamber of Pharmacists on legal matters where applicable. Chemistry is not viewed as a profession.	Pharmaceutical manufacturing employers are not represented on the MCCEI committee directly. Employers collaborate with the Medicines Authority on new regulations and graduates who become warranted. Firms work well with the University by providing industrial placements for future talent and advertise their vacancies *(where applicable).*
Skills gaps	It has increased the maintenance grant linked to specific courses. These courses have been deemed important to the country's needs in order to increase student enrolment.	The Department of Pharmacy and Chemistry introduced the M. Pharm (honours) and M.Sc. Applied Chemistry (level 7) to be in line with the Bologna process. The manufacturing pharmaceutical aspects are not emphasised enough and many students tend to orient themselves towards community and hospital pharmacy placements. The pharmaceutical technology course was created to address this gap. Non-technical skills gaps exist. With the pharmaceutical technology course, a specific study unit has been introduced PHR1606: Personal career and development, to address the gaps.	The Chamber of Pharmacists organises seminars for pharmacists on technical updates or legislation that may directly or indirectly affect them. Training in non-technical skills is not offered. The University has recently signed an agreement with CTP – an Italian company to organise specialised courses focusing on practical examples and hands-on experience of good manufacturing processes required in pharmaceutical industry. There is no mention of non-technical training to address the skills gaps.	Employers find that the pharmachem graduates have an adequate level of technical knowledge, which gives them the job, but may lack some non-technical skills.

Source: researcher's analysis, compilation and design, 2016

Chapter 8: Graduate Employability in Malta's ICT Sector

"Specific skills are valuable only to a single firm or a group of firms (whether an industry or a sector), whereas general skills are portable across all firms"

(Estevez-Abe et al., 2001, p.145).

8.1 Introduction

This case study investigates graduate employability in the ICT sector, which has grown rapidly to become one of the pillars of the Malta's economy. The study focuses on the skills gaps and shortages of new graduates working in this sector in terms of their formal tertiary education and considers strategies to promote their competences.

The study draws on secondary data from ICT policy documents and primary data generated from in-depth interviews held with fifteen institutional actors between January and July 2015. In selecting the institutions, stratified sampling was rejected, because small companies are not structured nor do they employ many graduates. The sample also included five large (more than 250 employees) and four medium-sized companies (50-250 employees). Interviews were conducted with five Chief Information Officers (CIOs) and four Human Resource (HR) Managers from the selected firms. Other interviewees included two academic members from HEIs, two actors representing the regulator, one interviewee from the ICT section of the MCCEI and one education and training provider.

Consistent with the pattern established earlier, the case study gives an overview of this economic sector. The main characteristics of the ICT market are investigated. This includes the skills demand, employability discourses, the institutional actors and the process by which they interpret and respond to the labour market and the skills regime, which are the policy outputs. The critical skills that are lacking in new graduates are drawn from the qualitative research and these are consistent with the findings of four previous surveys that have taken place regarding the ICT labour market. Some initatives to address skill shortages and gaps are discussed, leading to a conclusion.

8.2 The Context: The ICT Sector in the Maltese Economy

Malta was a latecomer in IT policy matters. Faced with the prospect of foreign competition and the 'new global economy' based on advanced technology in the late 1980s, policy makers devised a strategic plan for propelling Malta into the information age, transforming the country's economy from manufacturing to a service-oriented market.

The focus was on offshore banking, financial services and high-technology and value-added industries (such as pharmaceuticals and informatics). The beginnings of an IT policy came with a change in Government in 1987, which appointed a Public Service Reform Commission (PSRC) charged with planning overall organisational reform. The PSRC was tasked with the Operations Review (OR), which involved devising a five year strategic plan, evaluating existing structures and establishing an ICT infrastructure within the public sector.

As a result, the Management Systems Unit Ltd (MSU Ltd) was set up in 1990 to serve as a catalyst for change in achieving reform in the public service. Given the gap between labour supply and ICT demand, MSU Ltd assumed, in the absence of other national institutions, the role to bridge this gap. ICT shortages and skills gaps have arisen in the labour market due to rapid growth which concern policy makers and organisations at national and international levels. Part of the development of ICT was triggered by Government policies linked to decisions made by foreign direct investment and the digital agenda instigated by the competitive industry, unlike the accountancy and the pharmachem industries. These policies are outlined in Table 36 and discussed in section 8.5.

Malta's ICT vision revolves around building a digital economy which "will foster sustainable economic growth, wealth and well-being for all" (MITA, 2014, p.8) and will align the nation with the Digital Agenda for Europe. The Digital Malta Strategy 2014-2020 aims to guide the country towards the 2020 vision that "Malta will prosper as a digitally-enabled nation in all sectors of society" (2014). A governing body for Digital Malta 2014-2020 was set up to provide leadership, mentorship and support to stakeholders in understanding and implementing the Strategy. "The

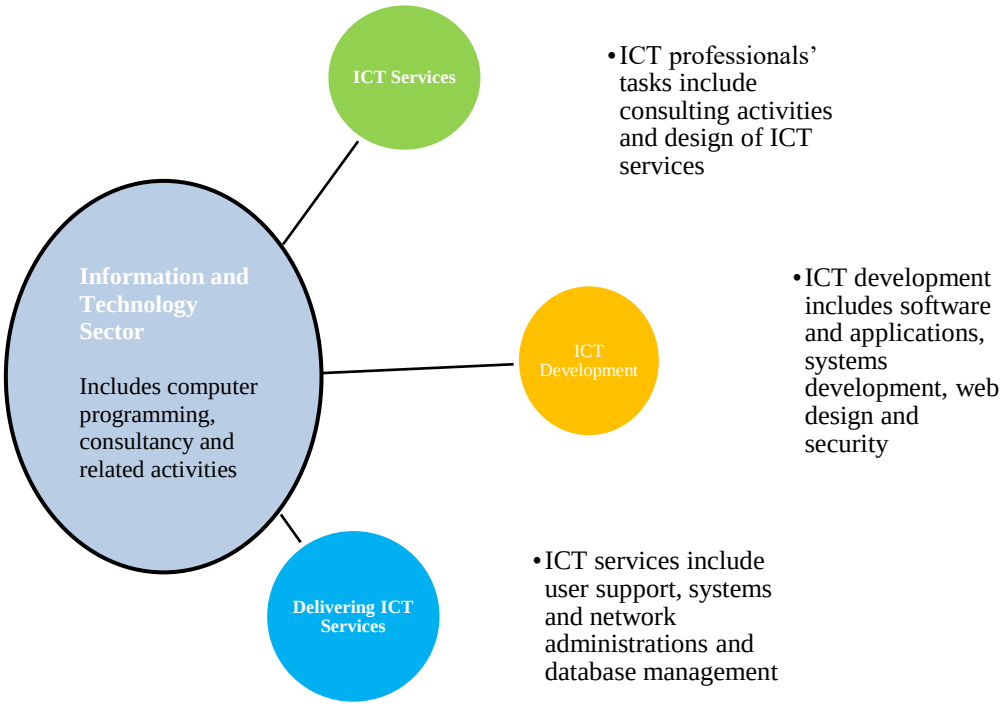
governing body will ensure a coherent strategic action across all entities executing its actions" (Dr J. Herrera, 2014, cited by Malta Today, 27 October 2014, website).

The strategy puts forward actions under three strategic themes, namely, Digital Business, Digital Government and Digital Citizen, supported by three strategic enablers: regulation and legislation, infrastructure and human capital. The Malta Communications Authority (MCA), Malta Information Technology Agency (MITA) and other key players are involved in the implementation of the digital economy. This is further elaborated in section 8.5.

The ICT sector is a vital supplier to the private and public sector. There are about 7.5% of all ICT businesses classified as large. Small and medium enterprises make up less than 1.5% of the business environment and 91% consist of micro-enterprises (NSO, 2015). These companies generally consist of ten to twenty employees with flatter organisational structures and lack processes and procedures. A similar trend can be seen in the I-Gaming companies: in 2010, there were 262 gaming companies registered in Malta and this increased to 278 in 2011, whilst slightly falling back to 275 in 2012 (NSO Statistics, 2013). ICT contributed 4.5% of GDP in 2012 (LFS 2013).

> "The core ICT sector covers computer programming, consultancy and related activities, providing a range of ICT services, ICT development and delivering ICT services" (European Skills Panorama, Analytical Highlight, November, 2012, p.2) (Appendix 17).

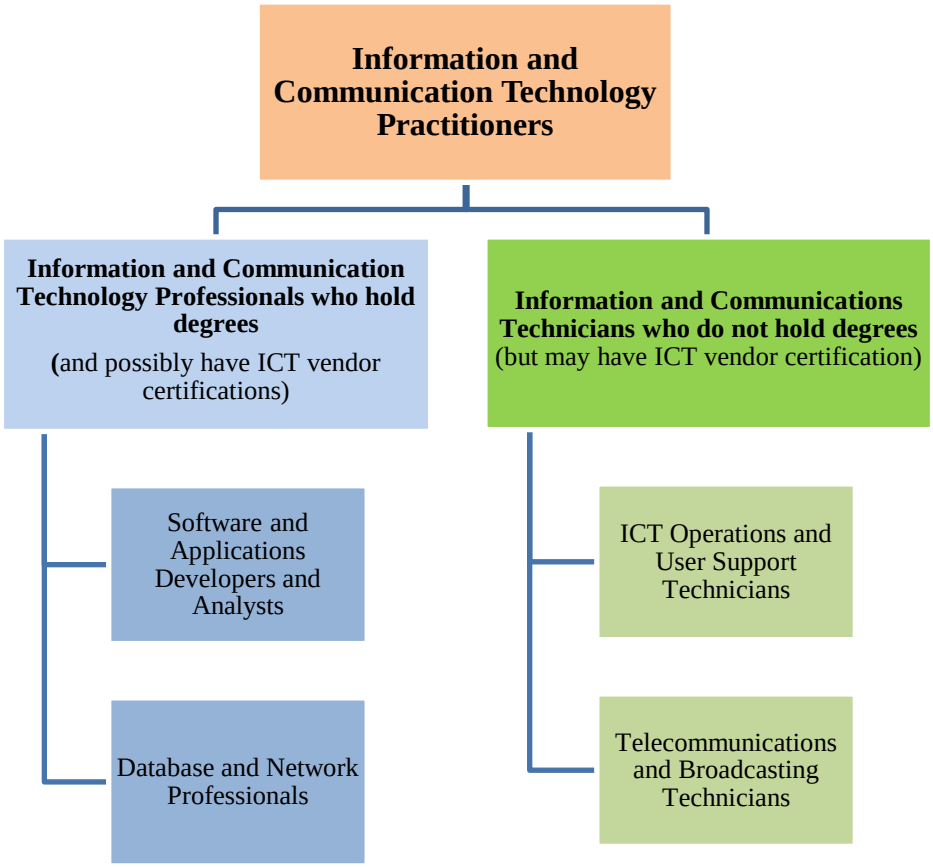
Figure 27: Diagrammatic representation of the ICT Sector



Source: researcher's compilation and design, 2016

ICT practitioners consist of two major categories, namely, ICT professionals and ICT Technicians (Figure 28). These sub-groups are found in the ISCO08 classification (used for the Eurostat-LFS) (Appendix 25).

Figure 28: Diagrammatic representation of ICT Practitioners in the Labour Market



Source: researcher's compilation and design, 2016

According to ISCO08 sub-major group 25, ICT professionals (Appendix 25):

> *"conduct research; plan, design, write, test, provide advice and improve information technology systems, hardware, software and related concepts for specific applications; develop associated documentation including principles, policies and procedures; and design, develop, control, maintain and support databases and other information systems to ensure optimal performance and data integrity and security"* (ISCO08, p.142).

Occupations in this sub-major group are classified into the two following minor groups: 251 Software and Applications Developers and Analysts; 252 Database and Network Professionals.

According to ISCO08 sub-major group 35, ICT Technicians (Appendix 25):

> *"provide support for the day-to-day running of computer systems, communications systems and networks, and perform technical tasks related to telecommunications, broadcast image and sound as well as other types of telecommunications signals on land, sea or in aircraft. Competent performance in most occupations in this sub-major group requires skills at the third ISCO skill level"* (ISCO08, p.283).

Occupations in this sub-major group are classified into the following two minor groups: 351 Information and Communications Technology Operations and User Support Technicians; and 352 Telecommunications and Broadcasting Technicians. Official statistics within EU Member States use different classification frameworks for data on sectors and occupations. These are mapped onto two accepted frameworks for data held at EU level, which are ISCO08 and NACE.[52] The nine ICT industries that participated in this qualitative research are classified under NACE 72 and the graduates employed as ICT professionals in occupational roles within ICT (supplier) companies are classified as ISCO Major Group 2, subsection 25 ICT professionals (Appendix 25).

The ICT workforce is not only employed in producing ICT goods and services. For, many companies, such as banks, audit firms and manufacturing companies have IT Departments that employ ICT practitioners. "The number of these ICT practitioners in many countries is higher than the numbers employed in ICT (supplier) companies" (CEPIS, 2002, p.95).

Since the labour market, skill considerations, educational and training provision all operate from the occupational (and not the sectoral) perspective, this research primarily focuses on the information and computing technology professionals. ICT (supplier) companies employ ICT professionals and information and communications technicians across a range of roles. These companies are the largest

[52] NACE - Nomenclature statistique des activités économiques dans la Communauté européenne. It is the statistical classification of economic activities in the European Community developed since 1970. It is a four-digit classification providing the framework for collecting and presenting statistical data according to economic activity in the fields of economic statistics.

sector employing this type of skilled labour, but there are those who work outside the core sector. The IT End-Users, who use ICT for their work, have not been included in this research because they do not employ skills to devise powerful software tools essentially for the benefit of other users.

There are three different ICT skill sets, namely, the professional ICT skills, the applied ICT skills and the basic ICT skills or ICT literacy. Professional IT skills refer to the ability to use advanced IT tools and/or develop, repair and create them. Applied IT skills pertain to the ability to apply simple IT tools in general workplace settings (in non-IT jobs). Basic IT skills are employed in using IT for simple tasks and for learning. This study focuses on the professional ICT skills in the sector. ICT (supplier) companies arise from and are strongly influenced by, the abilities of 'technical' people. Professional skills for ICT have come to the forefront, because of the significant skill gap. The development of strategy, policy and higher education initiatives in this field is summarised in Table 36.

Table 36: A Timeline of Strategy, Policy and Higher Education Initiatives: ICT

Year	Institutions, national policies, plans and actions
1981	The Government Computer Centre, Swatar - was set up.
1983	Diploma in Computing was launched
1984	Diploma course is reorganised and offered as a Maths, Computing and Logic course
1985	Higher Diploma course in Maths, Computing and Logic course
1987	General Elections The setting up of a new Department of Computer Studies within the Faculty of Science
1988	B.Sc. Computing (part-time, evening) was introduced
!989	Public Service Reform Commission (PSRC) 1989 **Operations Review (OR) 1989-1994** Malta Council for Science and Technology was set up to formulate and implement the National Science and Technology policy
1990	The Management Systems Unit was set up **Information Systems Strategic Plan (ISSP) 1991-1996**
1992	General Elections
1993	Board of Studies for Information Technology was set up, responsible for the Diploma in IT, the B.Sc. IT (honours) degree and the Masters in IT conversion postgraduate course. Faculty of Engineering was restructured. Electrical Engineering Department was split into three Departments. In the Faculty of Science, the Department of Computer Studies was restructured and renamed the Department of Information Systems. A new Department of Computer Science and Artificial Intelligence was created

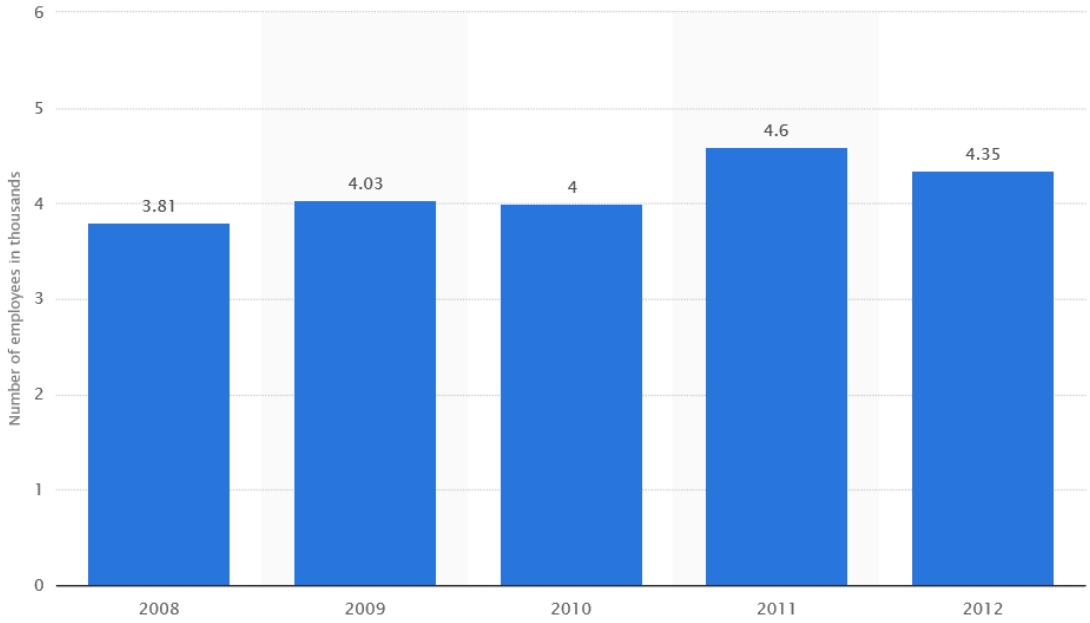
1994	Office of the National Strategy for Information Technology, University of Malta presented the **National Strategy for Information Technology for Malta (NSIT)** A new computer building was built and a BSc (Hons) IT degree was offered
1996	General Elections
1998	General Elections (Labour Leader and Prime Minister resigns) Management Efficiency Unit (MEU) was set up supported by MITTS Ltd **Information Systems Strategic Plan (ISSP) 1999-2001**
1999	Master's degree in IT was offered
2000	Office of the Prime Minister - 2000 e-Government Vision Vision and Strategy for the Attainment of e-Government in Malta 2001
2001	Central Information Management Unit (CIMU), Office of the Prime Minister Cyber legislative Framework – Data Protection Act 2001 **Information Systems Strategic Plan (ISSP) 2002-2005** The following courses were offered: National Diploma in (software); (networking); Higher National Diploma in (software); (networking)
2003	Malta Information Technology Agency (MITA) was set up The National ICT Strategy 2004-2006
2005	**Information Systems Strategic Plan (ISSP) 2006-2008**
2006	Malta Council for Science and Technology (MCST) was set up (Appendix 17) The National Strategy for Research and Innovation 2007-2010
2007	Malta Information Technology Agency (MITA) was set up **The National ICT Strategy for Malta 2008-2010: The Smart Island** Smart Learning Strategy 2008-2010; HelloIT program New Faculty of ICT was set up. (The Faculties of Science and Engineering were restructured). It offered three specialisation streams in the B.Sc. (honours) ICT degree (duration three years): Communications and Computer Engineering (CCE); Computer Science and Artificial Intelligence (CSAI); Computer Information Systems (CIS)
2009	The following courses were offered: MCAST Bachelor of Science (Honours) in Computer Networks and Software Development
2010	*e*Skills Alliance Malta was set up *e*Skills Alliance Malta Strategic Plan 2010-2013
2012	Malta Communications Authority created the National e-Inclusion Strategy (Networked Society 2012-2013) and the e-Business Strategy (Networked Society 2012-2015). The ICT Faculty evolved into five Departments namely: Communications and Computer Engineering; Computer Science; Intelligent Computer Systems; Computer Information Systems; Micro and Nano-Electronics. The ICT degree portfolio rose to fourteen programmes, of which five are undergraduate courses; nine are Master degree courses. Out of the nine master courses, four are by research. The Faculty offers PhD
2013	General Elections A new ICT Building was completed to house the Faculty of ICT
2014	ESkills (Malta) Foundation was set up. Digital Malta, 2014, National Digital Strategy 2014-2020 MCAST Introductory Certificate in Computing; MCAST Foundation Certificate in Computing; MCAST Diploma in IT
2015	The new ICT Building was completed in 2015 MCAST Advanced Diploma in IT (Computer Systems and Networks); IT (Computer Systems and Networks) (full-time on apprenticeship); IT (End User Support); IT (End User Support) (full-time on apprenticeship); IT (Multimedia Software Development); IT (Multimedia Software Development) (full-time on apprenticeship); IT (Software Development); IT (Software Development) (full-time on apprenticeship); BSc (Honours) in Computer Systems and Networks; Software Development; Multimedia Software Development

Source: researcher's compilation and design, 2016

8.3 The Labour Market for ICT Professionals

Figure 29 shows that the total number of employees in the ICT sector in Malta from 2008 to 2012.

Figure 29: Total number of employees in the information and communication technology (ICT) services sector in Malta from 2008 to 2012 (in 1,000)



Source: The Statistics portal, 2016

Employment in ICT companies has steadily increased from 3,810 in 2008 to 4,600 in 2011 and it dipped slightly in 2012 to 4,350. It may be deduced from these statistics that there is a correlation between an increase in graduates in I-Gaming companies and a 'dip' in the number of employees in the ICT services sector. ICT employees may have been poached by I-Gaming companies. 87% of the IT companies in Malta claim that the demand for ICT skilled graduates has increased due to the number of I-Gaming companies mushrooming in the labour market, vying for the same type of skilled labour. The expansion of the I-Gaming market offers further employment opportunities for ICT graduates, whilst also reducing the graduate pool for ICT companies. An increase of personnel in the ICT sector potentially creates new business and employment opportunities together with higher productivity gains, but this also places demands for new skills (OECD iLibrary, 1999).

The Government plans to set up Gaming Malta and an I-Gaming Academy to provide training and knowledge to the industry through formal professional development courses. Gaming Malta would serve as a forum to facilitate operations among operators, intermediaries and the regulator and ensure that support services can meet the industry's growing needs. The Academy would instil a high level of professionalism making Malta an attractive hub for gaming companies. It should be noted that in 2012, the Digital Games Initiative Group[53] commissioned a research study on a Digital Gaming Strategy for Malta to attract foreign direct investment (FDI) and identify ways of stimulating, supporting and expanding the local games industry in Malta.

A 2012 report by the McKinsey organisation, drawing on survey data from nine countries, found that less than half of employers (43%) were able to find the skills they needed in entry-level graduates. In Malta, the annual current supply of ICT graduates from University and MCAST is on average, two hundred (University and MCAST statistics, 2015). The demand gap is estimated at two hundred practitioners per year [eSkills (Malta) Foundation, 2014] and the jobs generated in the ICT sector have an employment multiplier of approximately three (INSEAD, 2012). The demand is therefore much greater than the supply.

Whilst the supply channels of ICT professionals are mainly educational institutions, there are *"ICT personnel who do not hold degrees but certifications and make important contributions to the industry"* (ICT03). The 'supply' model into ICT occupations is not a simple linear one (from a degree to an occupation). Table 37 shows the percentage of ICT graduates from the University of Malta and MCAST over a three year period, as published in the Employability Index Report, 2015.

[53]The Digital Games Initiative Group comprises ME, MCST, University of Malta and the Creative Economy Working Group.

Table 37: Number of employed ICT graduates from the University of Malta and MCAST

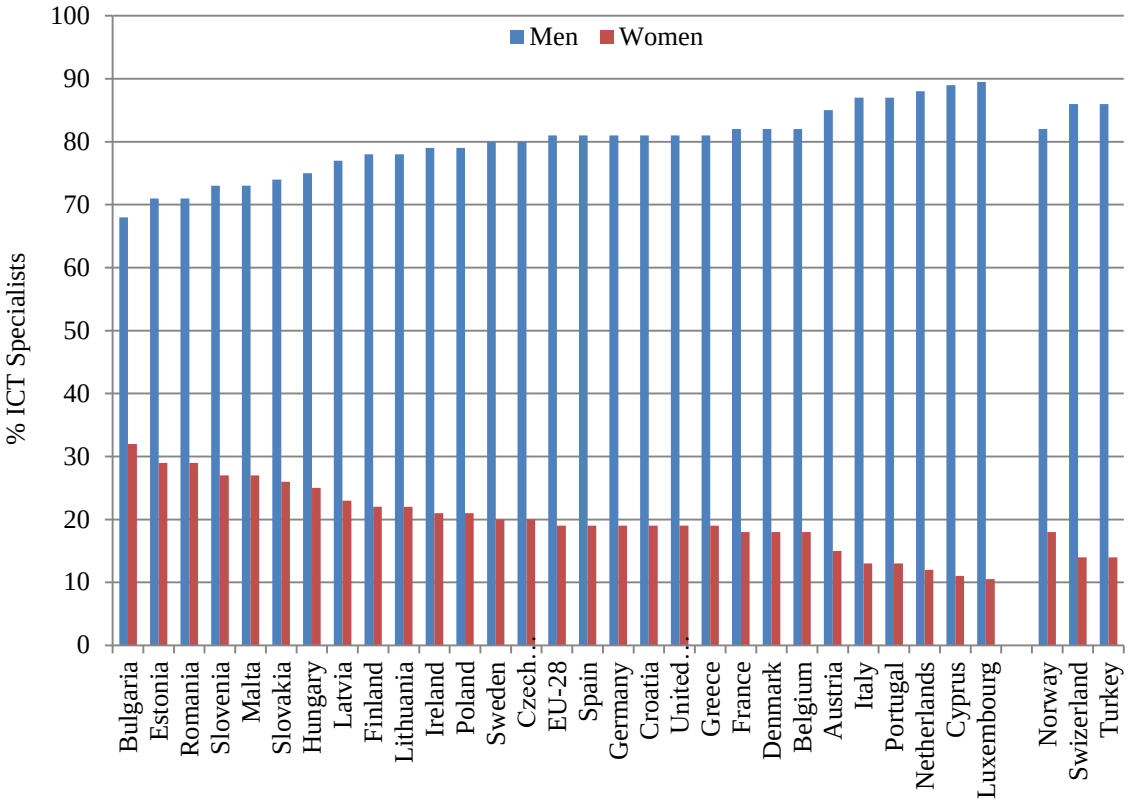
Institution	Faculty/Institute	Level	2011-2012	2012-2013	2013-2014
University of Malta	**Faculty of ICT**	Bachelor (honours)	85%	83%	81.5%
MCAST	**Institute of ICT**	Bachelor (honours)	52%	56%	67%

Source: ETC, 2015

The number of ICT University graduates has decreased over a three year period, whereas the MCAST vocational ICT-skills graduates have significantly increased in employment. University graduates are constantly and consistently in demand. Students have a wide selection of courses to choose from. The ICT Faculty has introduced specialised courses, such as Bachelor of Science in IT (honours) Artificial Intelligence and Computing and Business; yet, the labour market is experiencing skills gaps. As a result, *"MCAST seems to be addressing the labour market's short term needs"* (ICT04).

The majority of jobs for ICT specialists within in EU member states are held by males (Figure 30).

Figure 30: ICT specialists by gender, 2014



Source: Eurostat, December 2015

Men accounted for an EU average of 82% of all ICT specialists in 2014 (Figure 30). In Malta, the ICT discipline is predominately male (73%), i.e. 10% less than the EU28 average, and 27% female ICT specialists. In both Germany and the UK, 82% are male ICT specialists. In Malta, females make up less than 30% of the ICT workforce (LFS, 2015). Even though Malta's gender balance in the ICT professional labour market is better than the EU average, there still needs to be considerable effort to attract females to the technical work environment.

> *"I would definitely like to see more women entering the ICT industry because they bring so much to the table…Women are important market influencers and it makes sense for them to be designing and developing more of the products and services that are available"* (Ms C. Cassar, Alert Communications, n.d.).

Teaching young people how to code, is an excellent way of getting them interested in technology as a career, which is the case for girls and boys equally both inside and

outside schools. Education raises awareness about empowering and encouraging girls and young women to consider studies and careers in ICT.

E-skills supply is impacted by what institutions offer in terms of ICT education. Since tertiary education has 'limited' ICT provision, a number of specialisations in ICT are not available. "*This is where private industry education and training providers step in"* (PRA10). Private training and education providers have been incentivised to fill the gaps by offering foreign degrees by distance learning and industry certifications. "*If we see a gap in the market for a specific provision of training, then we are going to offer it. Private education and training providers will try to fill the gap"* (PRA10). *"I have begun considering graduates from foreign universities and MCAST, but my preference is University of Malta graduates because the level is different"* (ICT07). Another consequence is that Maltese students may also feel encouraged to study abroad facilitated by the fact that they have English fluency. A study, carried out by KPMG, Malta on ICT skills training revealed that growth and the local demand for certifications evolved to cover a wide spectrum of ICT roles and areas of specialisation. About 70% of the vendor-specific certifications were related to Microsoft-based products. Training took place due to the rapid growth of the local ICT sector, the contribution of MCAST, the Government's incentive policies, as well as the launch of the Smart City project.[54]

Persons, who intend to pursue an ICT career, need to learn foundational ICT skills to be better prepared before attending courses leading to vendor-specific ICT certifications. The survey showed that ICT companies preferred to employ academically qualified personnel. 93% employers claimed they actively supported their employees in obtaining vendor certifications. The study also revealed that local ICT service providers wanted a wider variety of vendor specific certifications, including HP, IBM, Macromedia, SUN Java and JBOSS. ICT service providers expect certified ICT graduates to have a good balance of theoretical knowledge and practical experience. The trends that have been impacting on the demand for vendor-specific certified personnel were identified from this study and it is concluded that there is: an increase in the current growth of the local ICT sector with the presence of

[54]The Smart City project is the creation of knowledge-based business townships based on the same model as that of the Dubai Internet city.

international players and local companies that are active in the foreign markets; a need for more academically qualified personnel; a need for quality attainment using fewer but more qualified technical resources; an ICT brain drain of Maltese certified personnel seeking lucrative work abroad. *"We are losing high skilled graduates to businesses abroad"* (ICT08).

A Profession in the making: Issues of regulation, language and roles

ICT professionalism and e-skills are facing the following issues. There is no legal framework for the ICT profession, which means that ICT practitioners are not warranted and are regulated differently to other professions. There are diverse national definitions that exist for ICT role profiles. Aligned ICT roles could potentially improve the supply of the profiles most in demand. A number of ICT practitioners operate in project teams and do not understand the career paths in other organisations operating internationally. Improved alignment in ICT career paths would help provide a platform for possible convergence.

Different job categorisation schema exists in different countries and there is no one single agreed list of job classification codes related to ICT workers. It is difficult to develop and deduce rough estimates of worker shortfall and compare these values across borders. Moreover, Malta lacks metrics on ICT professionalism. Stakeholders have undertaken research related to ICT professionalism and e-skill independently of other studies, therefore leading to duplication, conflicting approaches and inability to consolidate results. Accurate metrics would facilitate assessment of progress towards shared goals and mature the profession.

ICT is continually reinventing itself and the rapid changes occurring help drive innovation and increase productivity in organisations. These changes also lead to the demand for new skills from ICT practitioners. Eight out of nine employer interviewees from companies reported that over the next five years, they would need employees with new skills that were not currently available. Over time, ICT practitioners develop a suite of skills and knowledge that add to their employability. Training opportunities need to be continually provided to ICT practitioners to update their skill sets so as to remain competitive. *"We may need to rethink and seriously consider building these people ourselves, since software developers are hard to find*

in the labour market" (ICT04). When the interviewees were asked how they plan to help graduates acquire new skills, a number of approaches were identified. Seven out of the nine stated that they would train employees in-house. Five stated that they would send employees to be trained overseas, given that they have a company network. Six out of nine stated they would send employees to local courses provided by private education and training providers and eight out of nine claimed they would engage new skilled employees. Six out of the nine employers would import the skills from overseas. In the past, employers were reluctant to reskill and invest in graduate training while in employment, as it would increase the probability of the employee leaving the firm. However, with tax credit schemes and the increased availability of online education and levels of tuition, ICT practitioners have access to many educational resources and therefore, are encouraged to keep themselves up to date.

ICT Skills: Deficiencies and Challenges

There are conceptual and practical difficulties in attempting to define and measure skills in a fast moving area, such as ICT. Since skills are difficult to measure, proxies are used, such as educational attainment on the supply side and occupations on the demand side. Skills can be acquired through "formal education, work experience, on-the-job and external training, non-formal training and natural abilities" (OECD, 2002, p.228).

Another issue that arises is that some graduates lack a broad understanding of the foundational body of knowledge required by ICT professionals. Some individuals may have expertise in a given domain, but the knowledge is siloed and they do not know the limits of their knowledge, thus potentially increasing risk. Moreover, there is the need to establish codes of ethics/conduct to foster consistent and appropriate behaviour.

Improving ICT education is key to improving the pipeline of e-skilled workers in the longer term. Whilst recent statistics are encouraging, with more students graduating from ICT-related diplomas and degrees, this is not reflected in the jobs market. The number of students pursuing computer studies at SEC level is a shrinking pool.

> *"Students have lost interest in the area, and I believe it is because it isn't being taught in a creative enough way. They're bored and uninspired, so we need to look at ways of exciting them and encouraging them into the industry. Once here, they will realise what a dynamic and incredible future it could offer them"* (Dr I. Bartolo, CEO, 6PM Holdings plc).

One of the University's entry requirements to read for a B.Sc. ICT degree is a pass in Pure Mathematics A level. *"Different faculties, such as Engineering, Science, Architecture and FEMA, all compete for the same cohort of students since their entry requirements are similar"* (ICT01). The ICT degree intake cannot increase, because the number of students selecting A level Mathematics has decreased (MATSEC report, 2015). *"This is a phenomenon observed in many countries, such as the Scandinavian countries. The more affluent society becomes, the more likely 'comfortable' jobs are sought after"* (ICT01).

National and Supra-national dimensions of labour market policies

There is no EU authority at present that defines and organises the core knowledge of the ICT discipline that is all-encompassing and addresses all the ICT knowledge areas required by industry. That is, the landscape is fragmented. Different national ICT competence frameworks create challenges for ICT professionals to work across borders. "Currently there is no common language to describe professional ICT competences and skills, no basis for measuring these skills and no common approach to assuring the quality of the profession…" (Ms F. Fanning, Secretary General, CEPIS, 2012, p.95).

Clarifying and defining the ICT profession would encourage more people to enter and hence, address the skills gaps in the future. "ICT skills gaps are potentially acting as a brake on European competitiveness and recovery, given ICT's role as an enabler of business value" (European Commission, DG Enterprise and Industry, p.72). "79% of respondents may not have the breadth of e-competences required by their role" (CEPIS survey, 2011, p.40).

There are "concerns about an increasing lack of e-skills in the European workforce leading to a growing shortage of highly qualified ICT practitioners" (European Commission, February 2015, p.5). The European e-Skills forum had been set up "to

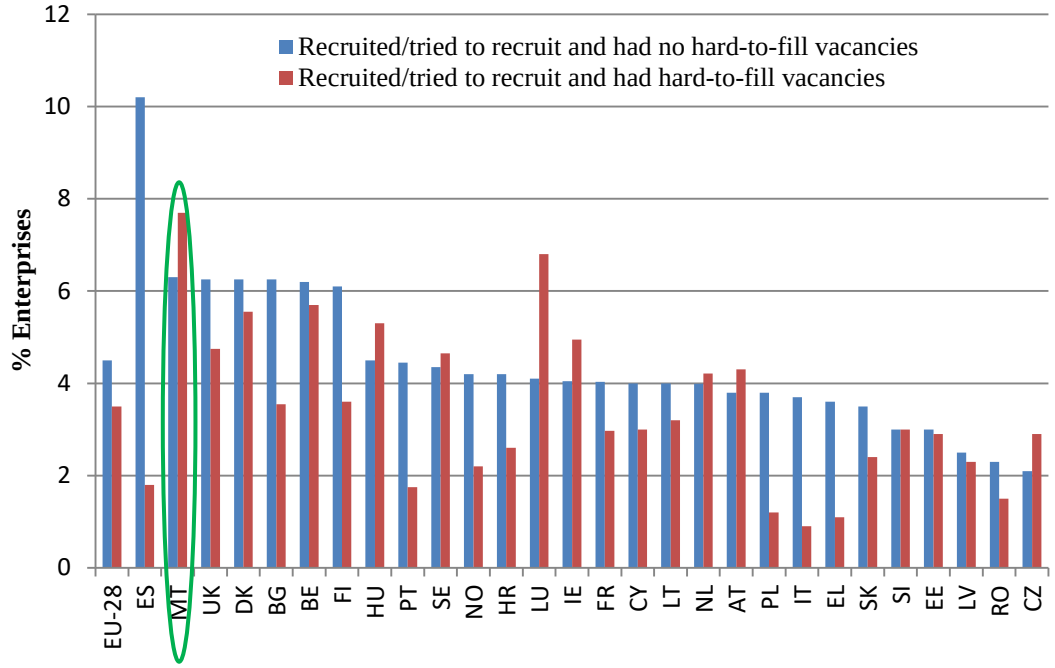
foster an open dialogue between all relevant stakeholders and to catalyse actions with a view to helping to narrow the e-skills gaps and address e-skills mismatches" (European e-Skills Forum 2004, p.10).

A 2012 common European Competence framework (e-CF) was developed from an employers' perspective, grounded in a work environment and reflecting workplace processes and organisational structures. It provides a common language for competences, skills and proficiency levels of ICT professionals that can be understood across Europe. *"There is confusion in the labour market. What is a software engineer to us may be given a different name in another company"* (ICT08). It was considered beneficial if member states used a similar one, thereby reducing costs and providing other potential advantages. The E-CF is a component of the EU's strategy for e-Skills in the 21st Century and also supports objectives of the Grand Coalition for digital jobs 2013, one of them being to increase the supply of ICT practitioners and ensure there are sufficient numbers of skilled people to meet future demand for ICT skills. The Grand Coalition is the largest collaborative effort in Europe, including Malta, which aims to:

> "offer more ICT training co-designed with the industry; implement job placement programmes; provide more digitally aligned degrees and curricula at all levels and types of training and education; and motivate young people to study ICT and pursue related careers" (EU Commission, 2013, p.45).

Eurostat statistics revealed that the demand for employees with ICT skills is growing while the number of ICT graduates had fallen by 10% (Eurostat, 2015). This trend implies that unfilled ICT practitioner vacancies will rise by 2020 (EU Commission, 2012).

Figure 31: Enterprises that recruited ICT specialists, with and without difficulties in filling vacancies, 2014 (% enterprises)

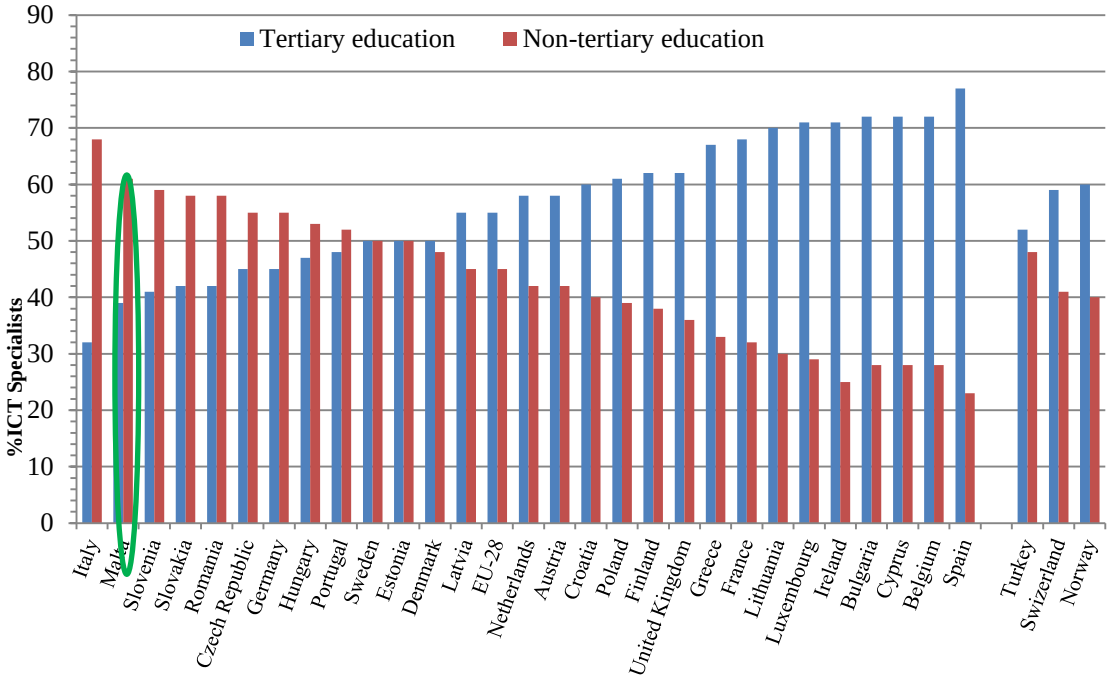


Source: Eurostat, November 2015

Figure 31 reveals that 7% of ICT enterprises in Malta, Germany and the UK did not find difficulties in recruiting ICT specialists in hard-to-fill vacancies. On the other hand another, 7% of ICT enterprises in Malta found difficulties in filling hard-to-fill vacancies. 4.5% and 4% of ICT enterprises in Germany and the UK respectively found difficulty in filling hard-to-fill vacancies.

The national Employee Skills Survey (carried out in collaboration with NCFHE, JobsPlus, ME, Erasmus+ Project) issued some ICT preliminary results in July 2016, highlighting the reasons why ICT vacancies are hard to fill. 82.4% stated that applicants did not have the required attitude, motivation and personality; 67.6% said they did not have the required skills; 50% contended they lacked the qualifications their company needed and 50% lacked the experience needed by the company (National Employee Skills Survey, 2016). The figure below shows the percentage of ICT specialists by level of education, 2014, in EU28 countries.

Figure 32: ICT specialists by level of education, 2014



Source: Eurostat, December 2015

Participation rates at different levels of education define the potential of EU members' future ICT workforce. In Figure 32, 39% of ICT specialists in Malta have a tertiary qualification in ICT as compared to 45% and 62% ICT tertiary qualified professionals in Germany and the UK, respectively. Malta has 17 percentage points less than the average level of qualifications in the EU, which suggests that the ICT profession in Malta is relatively young.

Research launched by the European Commission and undertaken jointly by the Innovation Value Institute (IVI) and CEPIS provides "insight into how the ICT profession might evolve in the coming years and calls for related stakeholders to get engaged" (Professor M. Curley, IVI Director, 2012).[55] This "is absolutely essential, if Europe wants to remain optimally competitive on a global scale" (Ms F. Fanning, Secretary General, CEPIS, 2012, p.95).

[55] Over 300 leading CIOs, ICT professionals and academics across Europe were interviewed - The e-Skills and ICT Professionalism, Report, 2012.

8.4 Skills Demands and Employability Discourses

Skills Demands

The debate relating to e-skills and ICT professionalism is complex, comprising many issues and emerging trends. Skilled workers are the bedrock of successful companies. In today's knowledge-based economies, technology is a key enabling factor for communication, innovation and efficiency. The demand for graduates is intensifying and supply is failing to meet this demand. *"We just cannot find enough ICT graduates. We have to import from overseas or use our network to meet our ICT requirements"* (PRA10).

The I-gaming sector has grown in Malta and has created many jobs, but searches for similar ICT skills, has led to fierce competition. *"All the I-gaming companies are 'screaming' for engineers in software development"* (Mr U. Bengtsson, CEO, Bettson Group, 2014). This sector does not play by the normal rules of ICT employment.

> "*I-gaming companies can pay high salaries and employees are less stressed. This impacts the phenomena of recruitment. These I-Gaming companies are high money spenders. Graduates would look for a job with a better salary offer"* (ICT02).

One interviewee claimed that *"our company manages to recruit ICT graduates after these people would have experienced working with an I-gaming company and found that they did not like it and reprioritised"* (ICT08). Employers view ICT graduates as having high expectations that do not match their skill. *"They* [students] *are graduating from University believing that they should be earning a good salary with very limited capability and skills"* (ICT02).

Graduates are trained when they join the company on average over a three year span and tend to seek other work opportunities for better pay and lifestyle. *"The young generation have a different set of values to ours. Job security was an important value to graduates a decade ago; this generation values job mobility"* (ICT03). Their educational certificates increase the portability of their skills, which creates a shortage of supply and lack of suitable skills for ICT companies.

To address these supply needs, some companies import foreign labour or source their network.

> "*We cross train locally and organise boot camps for graduates to specialise in specific areas, but the turnaround is quite long. As a result, we need to recruit from overseas due to lack of expertise locally. Foreign graduates are a quick fix"* (ICT03).

Alternatively, some companies resort to *"poaching skilled graduates due to high levels of mobility and scarce resources"* (GOV06). It is one of the fundamental coordination problems associated with training (Lynch, 1994). *"It is always difficult to find resources. We poach people from each other. No-one gets offended. If graduates want to move, we cannot stop them. It has become normal practice"* (ICT03). One criterion that is essential in recruiting foreign ICT graduates is that they must be fluent in the English language, which is an essential skill when dealing with clients. *"Last week I interviewed a Serb graduate who had the ICT skills required, but poor English. He was not employed"* (ICT03). Five out of the nine ICT companies in Malta prefer to employ Maltese graduates. *"Maltese graduates tend to be more committed and to a certain extent loyal to the company"* (ICT02).

Another option is to increase the number of student enrolments at tertiary level but the availability of graduates would only be in three or four years' time. *"The scalability of the current educational system is limited. Tertiary education provision moves at its own pace, slower than industry"* (PRA10). An alternative mechanism is to provide intensive industry-driven courses addressing particular employer demands. Employers value a graduate who has acquired vendor certifications. Certifications are important to an ICT company *"because they set standards in a particular area"* (ICT10) and are valued when applying for foreign tenders which specify certifications.

> *"These certifications imply that graduates have an edge over their peers. We do not pay them more for having these certifications, but employ them at a higher level within the organisation. In effect, they would be rewarded for their certifications by earning a higher salary within the organisational hierarchy of positions"* (ICT03).

Vendor certifications contribute to graduate employment and employability.

> *"I would prefer employing a graduate with a vendor certification rather than a graduate reading for a master degree. They are more valuable to us. Besides, a graduate in the process of reading for a master degree cannot work more than 20 hours"* (ICT03).

The international recognition of ICT certifications and standards facilitate mobility for graduates holding these credentials. *"Most ICT certifications are universally recognised and acknowledged"* (ICT03). For example, certification in programming languages and methodologies can help graduates integrate abroad, but this depends on the certifications' reputation and trustworthiness. Some certificates are awarded based on a two day course and a simple examination. *"Microsoft certifications, such as MCSE, MCSD would require significant effort and professional experience to acquire. Such a qualification would set a baseline of competence at a global level"* (ICT03). Navigating through certifications is complex for practitioners, especially for new entrants to the profession.

It is difficult to know what competences and proficiency levels will be achieved by a specific course/certification. Each member state's national qualifications framework is mapped to the EQF and can be used to help learners and employers understand as well as compare countries' qualification levels with different education and training systems. Two respondents contended that academic qualifications provide less support for mobility than professional ICT certifications. *"International certifications have more value than formal academic ICT qualifications in ICT"* (ICT04).

Employability Discourses

Graduate skills are influenced by four institutional actor groups: the Government, HEIs, professional associations and ICT employers. Academics are likely to have the greatest influence since they develop and teach the degree curricula, followed by education and training providers, who offer courses that are not available at the University or MCAST. Technology providers, such as CISCO and Microsoft, have considerable impact since employability is greatly valued, if graduates have acquired

vendor certifications of their technologies. The contribution of employers influences graduate skills by offering placements, sponsorships and collaborative curriculum development. *"Sector specific work placements, to me, are the most effective, but they are also the most difficult to organise"* (ICT04). The effect of this range of influences is reflected in the significant differences in the skills possessed by ICT graduates compared to those required by employers (Scott et al., 2002). Customer care and skills in managing projects as well as handling clients appear to be particularly important to employers, but are of lesser importance to academics. Employers also require skills in the latest technologies that are difficult to incorporate into standard curricula.

Different academic disciplines develop local notions of employability, ranging from educating professionals to providing a broad liberal education. For professional courses, such as accountancy and pharmacy, the knowledge competencies that graduates needed to acquire are determined by the professions. Regarding most vocational courses, MCAST is responsible for providing subject specific technical knowledge and skills, whilst employers apprentice graduates into jobs. The University 'defines' the knowledge and skills appropriate for employment. *"I would not expect any top University to prepare students in an industry specialisation. Universities prepare students in an academic specialisation"* (ICT01). The ICT Faculty at the University of Malta focuses on teaching conceptual matters whilst the labour markets tend not to tie the University to suppliers of particular products (graduates) or modes of production (pedagogy and curriculum).

However, employers complain that they are not getting the graduates they seek. The blame for this is placed at the door of the University and the responsibility for its correction is a task that the State has appropriated to itself. *"We cannot expect University to teach students the work we do. We expect that the University explains the technologies we use. For example, object oriented and delta programming. There is a difference between what the graduates expect or they believe they are, to the reality of what is"* (ICT02).

In the past, employers used to provide training programmes to help transition graduates into the workplace effectively, but these have declined. Seven out of nine

employer interviewees indicated that this was mainly due to the financial cost of training activities (ESF project 2.85, April 2011, p.126). Academics remarked that current employer expectations are unrealistic, because the latter expects fully work-ready graduates, capable of delivering market-quality solutions. *"Courses need to be more relevant to the needs of employers"* (PRA10). This raises the question as to what the role of the University is. Should it "be attempting to create 'work-ready' graduates rather than focus on providing a more, conceptual, theoretical grounding to students?" (European Commission, August 2014, p.56). One of the interviewees stated that *"we aim to employ people with brains"* (ICT01).

> *"Sometimes it is not the content of the course that sets the quality of the graduate, but rather the discipline of thought and action and the scientific rigour of approach that the course instils by virtue of the thought processes it elicits from students"* (HEI07).

The B.Sc. ICT degrees give students the depth and the knowledge of the basic fundamentals. *"Industry would need to train them, for the graduate to become productive after six months"* (ICT03).

The University's role is also to promote internationalisation, which seeks to respond to global and cultural forces. It emphasises student and staff mobility and European co-operation involving higher education institutions and other key players in the knowledge-based economy. It promotes international exchange or mobility programmes through the ERASMUS+ programme in Europe so as to help students develop graduate skills, such as open-mindedness, initiative, flexibility, communication, tolerance, self-awareness and to provide them with exposure to different cultures. Organisations operating in a global context are looking for "high potential [graduates] who are creative, empathetic and able to cooperate in diverse and international teams. International experience and an internationalised curriculum are essential pre-requisites for enhancing such talent" (Hermans, 2007, p.513).

What were the themes that emerged from the data analysis stage? They were used to create a framework for presenting the data. These themes appear in Table 38, similar

to the previous two case studies. Each of the institutional actors in the ICT field, namely, the Government, HEIs, professional associations (unions, education and training providers and the MCCEI's ICT section) and employers demonstrated commonality in the thematic issues, but tended to focus on and discuss some themes more than others, thus showing a different emphasis.

Table 38: Thematic table of institutional actors related to the ICT field

Themes	Government	Higher Education Institutions	Professional Associations	Employers
Use of different language	✓	✓	✓	✓
The meaning of employability	✓	✓	✓	✓
The value of credentials	✓	✓	✓	✓
The role of the University	✓	✓	✓	✓
Perceptions	✓	✓	✓	✓
Expectations (of graduates)	✓	✓	✓	✓
Competitiveness	✓	✓	✓	✓
Modes of training provision	✓	✓	×	✓
Labour mobility	×	×	✓	✓
Placements and Incentives	✓	✓	✓	✓
Collaboration	✓	✓	✓	✓
Skills gaps	✓	✓	✓	✓

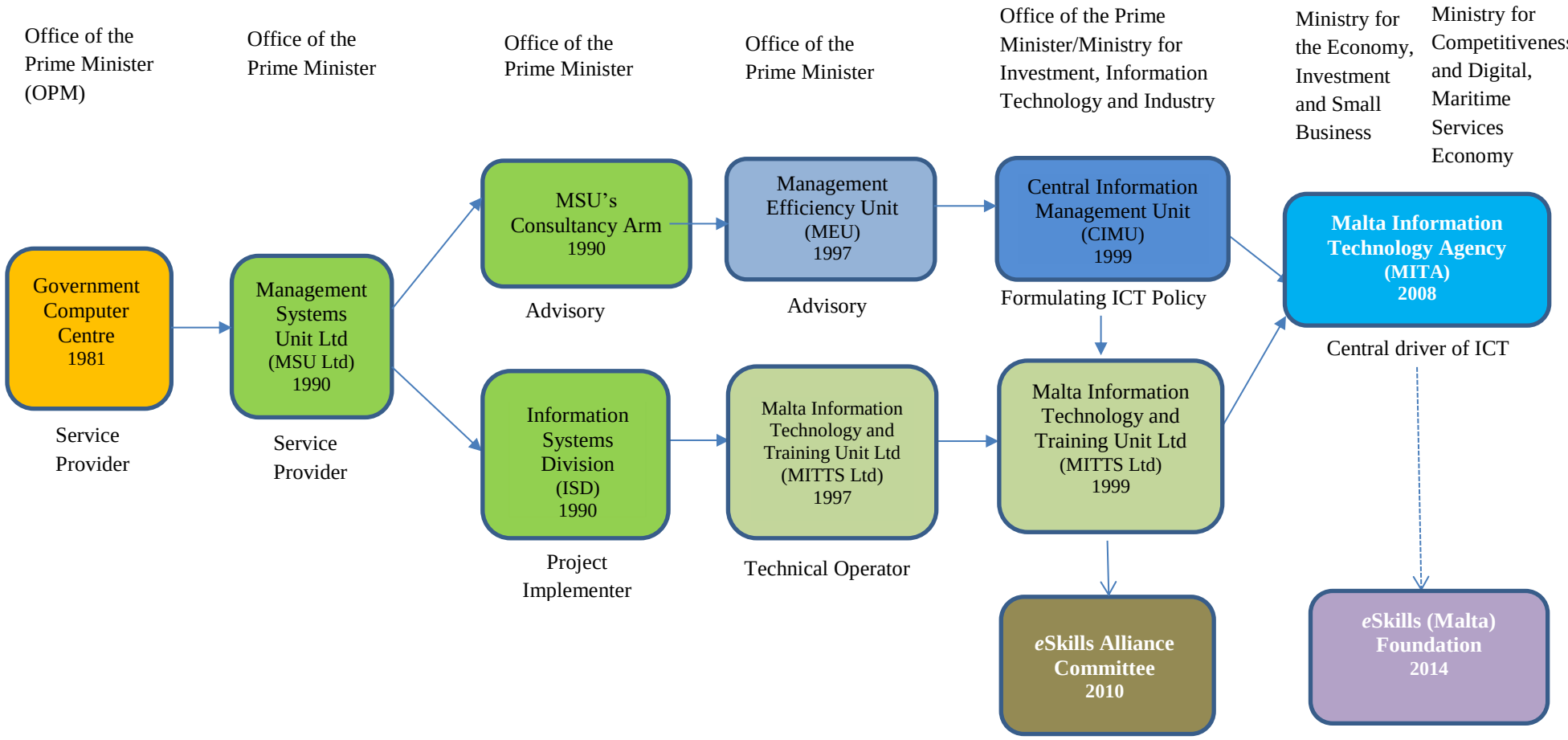
Source: researcher's analysis, compilation and design, 2016

From the table above, it clearly shows that ICT employers focused on all the twelve themes. Government and HEIs placed lesser emphasis on labour mobility and Professional Associations focused less on modes of provision, respectively. The principal themes in the discourses employed by the institutional actors in this field were considered and can be explained in terms of their roles and interests.

8.5 Institutional Actors and Policy Making

Key ICT policy developments have taken place since the 1980s. A number of entities were set up or transformed over the years and each was managed differently (Figure 33). MSU Ltd established a training institution - the STC - to provide National Computer Centre (NCC) UK accreditation courses in order to try and address ICT demand. It was government controlled, operating under narrow financial budgets and with limited skilled personnel. MSU Ltd was set up in 1990 to implement the first Information System Strategic Plan ISSP (1991-1996). It was an independent entity and introduced a number of operational changes along with well-designed IT systems, which were managed, developed and deployed. This entity was given sufficient funds to be able to recruit foreign consultants and project managers, reflecting the mentality then, of adopting a management approach. "It promoted concepts such as strategic planning, quantitative, human resource and financial management. Competences were enhanced and specialisation ensured" (Aloisio, 2012, pp.149-150).

Figure 33: Evolution of ICT policy and institutions within the Government of Malta, 1980 to the present.



Source: researcher's analysis, compilation and design, 2016

A strategy for Information Technology was needed for the local economy and in 1993, MCST commissioned an independent study, NSIT for Malta (Appendix 17):

> *"to establish what functions, capabilities and resources are required of IT so that the resulting strategic thrusts may embed IT within Malta's Business, industry and society and provide strong support for the desired growth and welfare of the Maltese economy and society"* (Professor J. Camilleri, 1994, p.7)

One of the strategic directions proposed, included the development of IT as a means for education, in-career training and IT human resources. In 1996, the MSU transitioned into MITTS Ltd, changing its policy direction from a management consultancy entity to a technical agency for the Government. Technical IT skills were maturing and consultancy services were delivered by a 1997 new set up - the MEU - housed in the OPM.

MITTS Ltd.'s core business was made subject to competition for technical work and it became a commercialised entity. Its strategic planning and direction for IT was migrated to a new entity CIMU, the role of which was to be responsible for information technology and systems management, policy formulation and the drawing up of IT-related legislation. This decision narrowed MITTS Ltd.'s functions and deteriorated the synergy between MITTS and the private sector, which created tensions. MITTS Ltd was considered the largest ICT company in Malta. However, whilst this indicated a large workforce, MITTS Ltd was "under resourced in a number of critical areas, primarily consultancy, security, core technologies, systems analysis and developer/programmer" (Strategic Principles 2001-2003, pp.20-21).

Another policy development was the implementation of three critical initiatives highlighted in the second 1999-2001 ISSP. The first was the establishment of the institutional and organisational capacity and framework required to optimise ICT investment. The second and third initiatives were leveraging information technology and systems to support regeneration and continued change in the public service as well as to get the 'Government on Line.'

The third ISSP 2002-2005 sought to mature the key strategic business and technology principles introduced and implemented as a result of the previous strategies. It built upon the principles established in the previous two ISSPs and on the vision and strategy for e-Government. Malta's strategy document for e-Government was the blueprint for Government's information systems development 2001-2002 and bridged the ISSP 1999-2001 and ISSP 2002-2005. The latter ISSP had seven thrusts, which included the introduction of knowledge management practices. These were information management and access; process knowledge; knowledge workplace; E-Business and intellectual capital management. An important policy was the creation of a new Ministry for Investment, Industry and Information Technology (MIIIT), which was responsible among other duties, to ensure that the ICT strategies for Malta were realised. It had committed itself to a new Action Plan entitled '*e*Europe 2005: An information society for all' which aimed to:

> *"provide a favourable environment for private investment and for the creation of new jobs, to boost productivity, to modernise public services and notably education and to give everyone the opportunity to participate in the global information society"* (European Commission, 2002, p.1).

The Government was committed to providing ICT education for everyone outlined in two official documents, the national ICT strategy 2004-2006, which laid down the e-policy and HelloIT (MIIIT, 2004), (Appendix 17). The Strategy identified 13 strategic objectives including the elimination of the digital divide, development of Government services, leveraging ICT for business and the development of the ICT industry.

> *"Technology itself has made it relatively easy for operations of any business to provide its service from just about anywhere to everywhere on the globe. It is hardly a matter of how close you are to where the money is anymore. It is more a matter of whether you have the people with the right skills working for you"* (Dr A. Gatt, 2004, p.5).

MIIIT evolved into MITC and decided to consolidate the ICT departments and agencies into MITA.

MITA replaced MITTS Ltd., being responsible for the entire policy and planning of IT in the Government and transformed its operations from delivering IT and training services to an agency focusing on digital excellence in Malta. It managed the public budget and determined its ICT priorities. It was led by a Board of Directors, including a representative from the private sector, responsible for National and Government Information and Communications Technology, reporting to the Ministry. Its remit was to implement the National ICT Strategy 2008-2010 (Appendix 17), in the context of the Government's vision for 2015: Malta as a regional ICT services hub.[56] ICT is considered part of Malta's economic vision and an important growth area.

This Smart Island strategy had strategic points based on the EU i2010 Action Plan,[57] which defined the context of the further development of the information society within the framework of the EU's Lisbon Agenda. Malta's RTDI strategy, mapped the path towards establishing the country as a relevant player in research and development, technology and innovation. Malta's industrial policy defined the economic transition towards greater overall competitiveness. The strategy was developed against best international practice in ICT and adapted leading-edge developments to the Maltese context. The Smart Island was built on the experience of the many organisations and stakeholders who had helped shape it.

Malta's 'vision 2015 and beyond' was a path to a knowledge economy. The Government had updated its original vision 2015 and identified seven sectors for development, with ICT being a key enabler. The other sectors included the financial services and support, tourism, transportation and advanced logistics, life sciences (pharma manufacturing) and advanced manufacturing.

Digital Malta strategy 2014-2020 mentioned in section 8.1 provides policy direction in delivering digital excellence. A vehicle was needed to shape Government policy on ICT capabilities and represent the collective voice of different stakeholders to improve the variety, quality and quantity of ICT competences based on the economic needs of Malta. To address this need, the eSkills Alliance Malta was set up by MITA in 2010 to

[56]ICT was part of the Vision 2015 alongside healthcare, financial services, education, logistics and maritime services.
[57]The i2010 strategy was the EU policy framework for the information society and media for the period 2005-2010.

address skills gaps and shortages within the ICT industry, which were hindering the sector from reaching its full potential. It stemmed from a real need to foster dialogue among key institutional actors, to anticipate better any change in the supply and demand of ICT practitioners, ensure ICT professionals had the skills to fully exploit technology, drive growth and thus, succeed in the global digital economy. It was a consultative body with representatives. The University of Malta, MCAST and the Ministry of Education, Employment and the Family (today MEDE) and the main decision-makers in ICT education and skills supply. MCCEI and the MEA were also part of the eSkills Alliance Malta and represented other ICT employers who influenced the demand for ICT skills. MCST and MITA were also involved in their quest to address the current gap between the resources and skills needed by the ICT industry and the resources and skills available in the labour market.

The aim of the eSkills Alliance Malta was to identify and create practical, relevant targeted ICT skills needed to attract investment and jobs with the best prospects. It analysed a number of similar competence frameworks in Europe, including the Skills Framework for the Information Age (SFIA) in the UK, the Advanced IT training System (AITTS) with APO-IT in Germany and the IT Competency Model – ETA/ODEP in the US. The EU has created the European e-Competence Framework (e-CF) and has comparative alignment with these frameworks. It considers *'attitude'* to be embedded in the competence and defers to more targeted competence frameworks for roles with a dominance of non-ICT skills.

MITA partnered with e-skills UK and bought the licence of the IT Professional Standards. The Standards for ITalent set up an official set of Maltese ICT occupational standards and e-skill guidelines for use by the government, the educational authorities and institutions, other public stakeholders, the private sector employers and individuals interested in ICT skills and the industry. These Standards helped reduce any skills gaps that were hindering business development by assisting the companies in targeting suitable training for their employees.

> *"The absence of a clear set of standards will lead to inefficiencies in the growth and utilisation of the current and prospective ICT talent pool. The investment in the Standards for ITalent marks a significant step towards augmenting the ICT profession"* (Minister A. Gatt, 2011).

The National Digital Strategy (2014-2020) proposes that the Government will "continue to invest in the Standards for ITalent as the eCompetence framework for providing defined, visible career streams for individuals in the ICT profession" (2014, p.60). It is planned to update the framework to reflect European and international development standards and feedback from institutional actors. However, this investment has not resulted in an embedded institutional knowledge and will require further material to reach a body of knowledge comparable with the e-CF. *"The problem was getting companies to comply, because they could not see much benefit"* (ICT01). ITalent is possibly too granular to be generally applicable to the bulk of Malta's ICT employment structures" (Mr. M. Gatt, CEO, eSkills (Malta) Foundation, 2014), which has led to a lack of harmonisation.

The Alliance was a mechanism to ensure that all stakeholders contributed together towards the understanding of what skills are needed, how they could be generated, attracted and maintained as well as how such skills could be mobilised and combined to foster innovation and competitiveness at the national level. It was recognised that neither stakeholder groups nor organisations alone could shrink the gap between demand and supply of e-skills. *"The eSkills Alliance Malta was a game changer. Historically, there was no interaction with the academic world and we welcome it"* (ICT03).

In 2014, the eSkills Alliance Malta evolved into the eSkills (Malta) Foundation. Its remit is to advise Government and stakeholders on matters related to e-Skills policy; to contribute to the expansion of ICT educational programmes and related formative initiatives; to lead an ICT professionalism development programme; to instigate further reform in the ICT educational offerings and contribute to capacity-building in the ICT education community; and to champion campaigns that promote the Maltese e-Skills potential locally and internationally. This Foundation is a coalition of various representatives of key entities in investment, employment and industry committed to

improving the variety, quality and quantity of ICT competences for economic growth. It has been acknowledged as being a National Coalition for Digital Jobs aimed at reinforcing the education system and catering for the employment needs of the ICT and I-Gaming sectors. Its aim is to create a strong cluster of ICT and I-Gaming professionals.

Both the creation of the eSkills alliance and the Foundation as consultative bodies have played and continue to play essential roles and form synergies in the development of the future workforce together with strategic key actors in the ICT market. The eSkills (Malta) Foundation does not regulate the ICT profession, but rather, tries to promote consistency across the key players. *"We are trying to promote and introduce uniformity and standardisation in the [ICT] industry"* (GOV15). A recent e-CF seminar in 2016 for educators and industry professionals emphasised this European Standard and stressed the importance of a common language for competences, skills and proficiency levels that can be understood across Europe. Standardisation would contribute to addressing the skills gaps as revealed in the preliminary results of the national employee survey (July 2016).

8.6 Skills Regime

The use of the concept of a skill regime captures the existence of institutional complementarities. They are conceptualised as an interconnected set of institutions in education and training, industrial relations, labour market and welfare state policies that shape the incentives of employees and firms to invest in different kinds of skill formation. This has an impact on the overall skill profile of a given economy. There is a complex relationship between the way these institutions influence firms' skill decisions and production strategies and the way the interests of economic actors, based on these production strategies, feed back into the political system to adapt the existing institutional framework. Government shapes the institutional frameworks of education systems and labour markets, so that employers have to adapt their preferences accordingly.

IT training, leading to recognised qualifications, has been significantly emphasised since the subject was integrated in the market. STC (a branch of MITTS Ltd),

synergised the IT training and specialised in IT education. Human resource development was fundamental to MITTS Ltd in terms of both its ability to manage the supply and demand of labour of ICT for its own internal capacity as well as to meet its continuous need for reskilling and skills upgrading. MITTS Ltd's human resource development vision stimulated the national ICT agenda in relation to ICT labour dynamics. In the 1980s, the MSU Ltd (which changed its name to MITTS Ltd) and fourteen local IT firms joined their efforts to address the crippling gap of ICT labour supply. New Age Training Ltd was created to synergise efforts to equate the demand and supply of ICT skills.

In 1996, the Board's direction of MITTS Ltd was that of a commercialised entity and Nucleus Training International Ltd (NTIL) was viewed as a competitor of STC. In spite of the fact that MITTS Ltd had 20% shareholding in NTIL, it retracted its partnership's role with this company and entered into direct competition with it. A consequence of this decision was deterioration in the relationship between MITTS Ltd and the private sector. It was an anti-competitive measure in the ICT business area. As one of the actions to bridge the tension between the private sector and itself, MITTS Ltd entered into an agreement with NTIL - a public-private joint venture (OPM, MITTS Ltd, NTIL) - to manage, develop and market STC, the training arm of MITTS Ltd in 2000. It was specifically formed to set up a centre of excellence for IT training primarily for IT professionals in Malta. The Government had then decided that commercial ICT training was not MITTS Ltd.'s philosophy and it needed to focus its activities on core business. It divested itself from this business and withdrew from NTIL.

The core business of NTIL was the education provided under the National Computing Centre (NCC) umbrella. STC initially focused on offering certificate and diploma courses in IT and Management. It delivered courses for students and industry professionals that met the exacting standards of world leaders, such as Cisco, Microsoft, Oracle. These strategic alliances were sought as a way of boosting the national ICT sector. The Centre delivered highly practical, yet academically rigorous and industry-oriented qualifications and certifications, recognised by local and overseas ICT industries, designed to give students an international passport to an IT career. Courses that covered important technologies included dot NET (.Net), UNIX and Linux. The flexibility of these programmes rendered them adaptable to a wide spectrum of

prospective candidates ranging from students lacking the basic entry qualifications and given foundation level training to enable them to join mainstream courses in web development and networking up to tertiary level students aiming to achieve a recognised B.Sc. IT degree.

STC was also a Cisco Regional Academy. The Cisco Networking Academy programme has seen Cisco Systems, a global frontrunner in networking and security technologies, collaborating closely with education establishments, business communities, governments and community organisations around the world. The Cisco Networking Academy Curriculum[58] is focused on teaching students internet technology skills and how to design, build and maintain computer networks. Other specialised courses range from Microsoft and Oracle software development tools to certified service management and information systems consulting.

The private sector had geared itself considerably within the ICT training business and the NTIL model no longer applied. Government closed STC in 2005 with the following measures, i.e. STC students following CISCO academy courses were migrated to other official CISCO academy courses in Malta; and students who were following the NCC course were migrated to MCAST or other private sector training providers.[59]

The Malta the Smart Island Strategy 2008-2010 included developing the potential for a smart workforce. A number of targets were identified:

- introducing ICT programmes at MCAST and the University of Malta;
- expanding the role of private sector ICT training;
- introducing a wider portfolio of skills;
- expanding the transferable and specialised ICT content through all education levels and niches for ICT.

MITA took the leading role in the development of the workforce "with the aim of creating a national educational platform which is sufficiently dynamic to harness opportunities created by the global developments in the knowledge economy" (MITA's

[58]The curriculum is both web-based and hands-on, aimed at improving prospects within organisations or providing access to highly-paid professional careers.
[59]Memorandum from MITTS Ltd to Cabinet on 30 May 2005.

Strategic Plan 2009-2010, p.8). It also built, nurtured and sustained excellent relations with the national and international IT industry by outsourcing work functions.

The University of Malta and MCAST decide on which education offerings they will deliver, thus impacting on the entire e-skills supply of the country. A number of ICT programmes have been set up to reflect the ICT needs of industry. The University of Malta offers a B.Sc. (honours) in IT, designed to meet industry requirements and a computer course at master's level. The IT related departments engaged a number of Maltese academic staff members who undertook IT doctoral courses overseas, leading to collaboration with British and German Universities. The IT Board of Studies was upgraded to a Faculty of ICT in 2007, also offering doctorate degrees. A number of courses from other faculties were transferred to the new ICT Faculty, because students enrolled on IT courses and ICT was growing nationally due to Government incentives. This reorganisation was carried out "to reflect the needs of industry which now requires practitioners to be broadly knowledgeable in ICT and proficient in a particular field" (Aloisio, 2012, p.132). ICT was being recognised as one of the most substantial economic enablers.

The five degree courses being offered by the ICT Faculty lead to a Bachelor of Science (honours) in Computer Engineering, Computing Science; Artificial Intelligence; Software Development and Computing and Business. The length of these courses is in line with the Bologna process (Appendix 26). Most students tend to opt for the bachelor's degree in software development.

MCAST set up the Institute of ICT, which provides an array of academic and vocational education courses to prepare students for employment in this fast-growing industry. These range from foundation to three undergraduate programmes. The degree courses in ICT include Bachelor of Science (honours) in: Computer Systems and Networks, Software Development and Multimedia as well as Software Development (Appendix 25). *"All these courses are mushrooming. The University can make this a bit more evident to us. I suggest we should receive updates on courses, online"* (ICT07). These MCAST qualifications are generally requirements for "jobs in computer hardware, software development, ICT support, computer networks, digital gaming, and interactive media" (MCAST website, 2016).

These courses seem to be similar in content across these two (academic and vocational) institutions and in effect, they are competing with each other. Eleven out of fifteen respondents were of the opinion that MCAST should not be competing with the University of Malta by offering similar ICT degree programmes. *"MCAST should be positioned to produce generalists. These students have the capabilities which have a certain stretch. Companies may have software developers moving into design and need people who just code"* (ICT05). *"All these qualifications have confused companies. We do not know what, in reality, is an 'ICT graduate' level of education since ICT is not a warranted profession"* (ICT02). Employers have communicated their views about MCAST's educational offerings through the MCCEI. *"MCAST students should focus on one ICT language and not learn many areas. The capacity is what it is. Do not give me [the employer] a graduate but a C sharp developer"* (ICT02). This is a clear message from employers that the ICT vocational graduates should be 'specialists' in their focused area of technology.

MCAST recently revamped their apprenticeship scheme and provides students with high-quality underpinning knowledge that is indispensable for industry and economic growth. The MCCEI's IT section has *"welcomed the incentives* [which assist] *companies in offering apprenticeships and work placements"* (EMP05). A clear differentiation is maintained between vocational and academic education, which is similar to the UK and hence, unlike the German system, in its early sorting of pupils into different streams in secondary education.

Firms participate in apprenticeship training for different reasons: One of them is that "the completion of a formalised apprenticeship scheme, leading to a recognised occupation allows for greater mobility of graduate apprentices across firms…" (Thelen and Kume, 1999, pp.34-35). Other routes to obtaining ICT qualifications and certifications are offered by private education and training providers. The ICT courses on offer are recognised by the NCFHE and also contribute to the supply of ICT professionals for the labour market. In spite of these initiatives, skills gaps still exist.

8.7 Skills Gaps

The interviewees were asked to identify what they considered were the main technical and non-technical skills gaps they perceived to be lacking in new ICT graduates. The hard-to-fill technical vacancies and the non-technical skills gaps are tabulated in Tables 39 and 40 below.

Table 39: Employers' expectations of technical skills in new ICT graduates

Technical skills and Intellect	
Software development	Analytical and critical thinking
Project management	Logical computations
Knowledge of specific IT languages	
Mobile applications	

Source: researcher's analysis, compilation and design, 2016

Seven out of nine employer interviews exhibited concerns about the lack of technical skills. *"We do not expect the University to cater for the lack of [technical] skills. They can easily be addressed by technical training"* (ICT01). Table 40 quantifies the qualitative findings and rates the types of essential non-technical skills sought by ICT institutional actors in order of perceived importance based on the thematic analysis of classified responses.

Table 40: Institutional Actors' expectations of non-technical skills in new ICT graduates

Non-Technical Skills	Frequency of response			
	Government (x2)	**Higher Education Institutions (x2)**	**Professional Associations (x2)**	**Employers (x9)**
Communication skills • effective verbal and written communication • client-facing communication • articulate clearly in the English language • telephone handling to distinguish between the formal and informal approach presentation skills	**2**	**2**	**2**	**9**
Teamwork • flexible • adaptable	**2**	**2**	**1**	**8**
Problem solving	**2**	**2**	**2**	**7**
Commercial/business awareness • can think outside the box • able to see the bigger picture • able to network • knowledge of the sector/market that clients operate in	**2**	**2**	**1**	**7**
Language skills • spoken English • knowledge of foreign language/s	**2**	**2**	**1**	**8**
Emotional Intelligence • self-awareness • social awareness • self-management	**2**	**1**	**2**	**6**
Taking Initiative	**1**	**1**	**2**	**5**
Professional ethics	**2**	**2**	**2**	**4**
Personal characteristics or behaviours • attitude • working independently • confidence • drive • professional outlook • personality fit • *'can do'* approach	**2**	**2**	**2**	**6**
Items not formally articulated included creativity and entrepreneurial skills.				

Source: researcher's analysis, compilation and design, 2016

Table 40 identifies the common non-technical skills gaps, as perceived by the ICT interlocutors obtained during the primary research. The respondents reported that new ICT graduates are perceived to lack, in varying degrees, the following essential non-technical skills: communication skills, teamwork and English language skills, problem-solving skills, commercial awareness and emotional intelligence. *"I had staff promising clients the work and was not delivering. Their reply to the clients would be that the work has not yet been carried out rather than stating that we are working on it and it is currently being handled"* (ICT02). Other skills that were mentioned included creativity and entrepreneurial skills. The relevance of these non-technical skills depends on the type of employment (formal or informal), the economic sector in which the company operates and the size and nature of the enterprise. These skills may be common to other sectors or can vary, depending on the service being delivered.

Reference is made to four national employer-based studies of ICT industry-relevant graduate skills, which focused on the expectations of employers on technical and non-technical skills as essential to the industry, the findings of which were compared to the primary research outcomes obtained for this study. MISCO International carried out research among the ICT and the Media sectors (2012-2013) and revealed that these ICT companies had the following vacancies, namely, software developers, technical specialists, solution architects, project managers and business development managers. It also revealed that ICT graduates needed to have technical knowledge of the following six programming languages namely: Java, JavaScript, SQL, PHP, C Sharp (C#) and Cloud computing services (CCS). New areas for business expansion linked to the emerging technologies,[60] were identified namely, cloud computing, mobile services, social media, web/software development, e-Commerce and on-line marketing. New technologies would demand diverse technical skills in the labour market. This research also identified the non-technical skills sought by IT companies as being: business communication, teamwork, business writing, English fluency, interpersonal skills, leadership and creativity. The non-technical skills, namely customer care, presentation skills, problem solving, business intelligence, business skills, leadership, creativity and work ethics elicited from the current research give insight into the key generic skills sought by employers, together with common skill groupings and may be used by

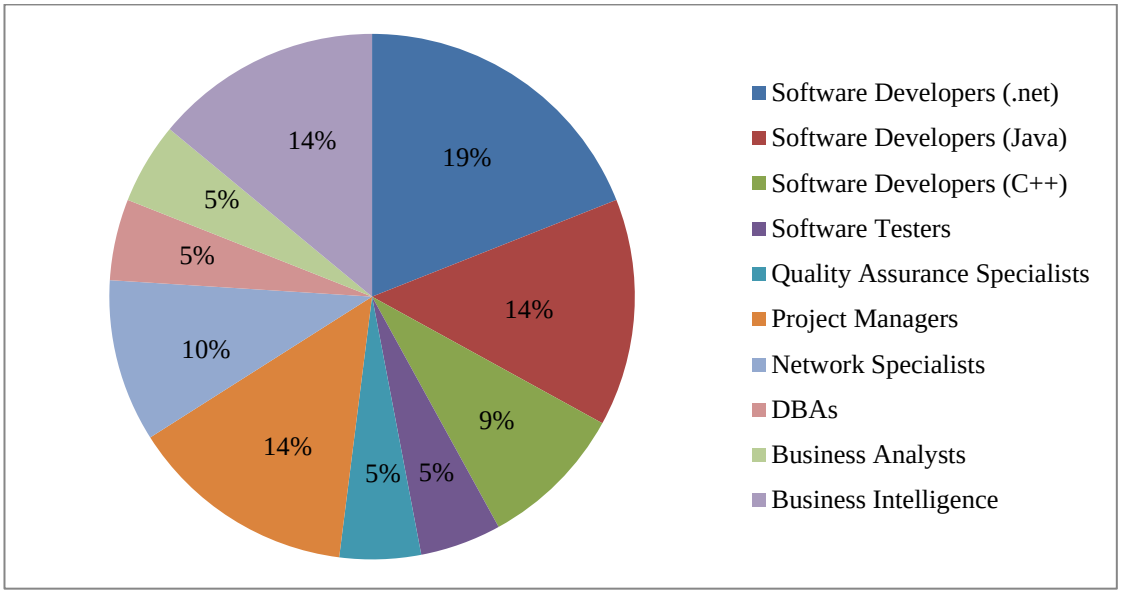
[60]Emerging technologies include cloud computing, social tools and technologies, big data, cyber security and the internet of things.

educators to ensure offerings meet business demand. Further modifications to curricula to reflect these requirements could mitigate the current shortages [and skills gaps] of student enrolments.

An ESF project 2.85 Linking Industrial Needs and VET to optimise Human Capital was carried out in 2011. Its aim was to address short and medium term educational needs of ten industrial sectors for the period 2011-2015. ICT was one of the sectors under investigation. The research included the identification of potential technical and transferable skills gaps as well as shortages of the ICT workforce. The research findings revealed the technical skills gaps as being, a lack of general knowledge of the ICT industry, products, services and work processes, including open source mobile applications and project management skills. The non-technical skills that ICT graduates should be able to demonstrate are the following: customer care, presentation skills, problem solving, business intelligence, business skills leadership, creativity and work ethics.

A Maltese e-Skills Demand and Supply monitor 2013 was developed by E-Cubed Consultants on behalf of the eSkills Alliance as a tool to gauge the gap between the supply and demand of e-skills, i.e. the present and forecast availability of e-skills and how this matched the anticipated demand from the industry (Figures 34, 35). It also analysed the factors affecting or contributing to the supply and demand of e-skills in Malta. This tool was for a three year forecast of ICT graduates and certified individuals with skills analysed across key competences along with the identification of non-technical skills demanded by the industry and the hard-to-fill vacancies 2011-2013. This was carried out through the collaboration of MITA and the international research institution INSEAD eLab.

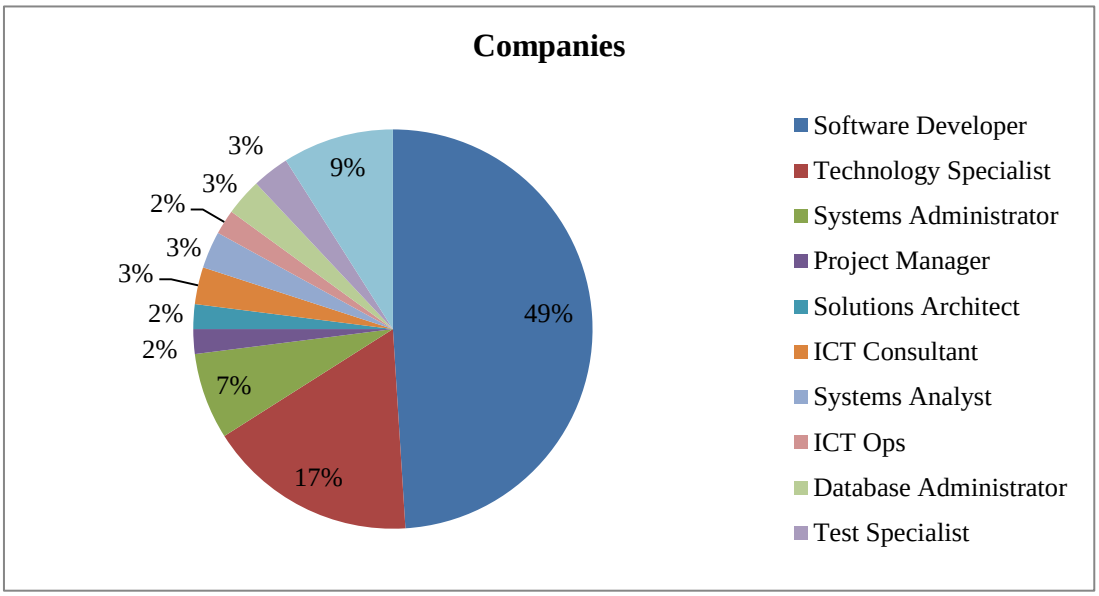
Figure 34: The main technically skilled occupations sought by Industry



Source: ICT Supply and Demand Monitor, 2013

In Figure 34, ICT companies reported that software developers with technical knowledge in different IT languages and project management are in great demand.

Figure 35: Vacancies in ICT companies 2013



Source: ICT Supply and Demand Monitor, 2013

Figure 35 shows the vacancies that existed in ICT companies in 2013 and there was a strong demand for mature development skills by the industry. The ICT vacancy

monitor 2013 affirms the technical gaps that exist in the labour market in Malta. Some of the non-technical skills revealed to be lacking in ICT graduates are similar to the previous two case studies. The Supply and Demand Monitor 2013 did not focus on the non-technical skills needed by ICT graduates as perceived by employers. In the light of the literature review and the foregoing studies, it emerged that there was no single set of ideal ICT skills for ICT (supplier) companies.

The National Employee Survey 2016 has issued some preliminary results on ICT. The skills lacking in applicants who applied for hard-to-fill vacancies are the following: 100% problem solving skills; 100% team working skills; 78.6% English language skills; and 60% strategic management skills. These 2016 results confirm the findings in this research regarding new graduates employed in the ICT sector.

In an attempt to respond to the skills gaps in technical and non-technical skills, a number of collaborative programmes with various institutional actors have been organised in order to promote the sector and nurture the ICT profession. Agreements with vendor companies have taken place to give young professionals the technical knowledge. MITA also launched a co-financed scheme with employers to offer student placements during the summer months. The MCCEI fully supported these initiatives because they are addressing one of the country's needs. Industry suggests that there should be a formal collaboration with HEIs to discuss their requirements. 91% of ICT employers interviewed, reported that there is no official forum to discuss their requirements with HEIs. *"I would like to find channels with the University of Malta and MCAST where we can discuss and find a means of engagement. I do not know which door to knock"* (ICT10). *"I think the cooperation with the University cannot be a short term solution"* (ICT04).

8.8 Conclusion

This case study chapter has analysed how institutional actors in the ICT field interpret, influence and respond to graduate skills availability. Each of the twelve themes was analysed revealing that the four institutional actors tended to emphasise some thematic issues more than others during the interviews. These themes have been discussed throughout the whole case study. A summary of the thematic analysis is tabulated in Table 41. The theoretical definitions of the themes are found in Appendix 1.

Table 41: Thematic Analysis by ICT Institutional Actors

Themes[61]	Government	Higher Education Institutions (HEIs)	Professional Associations	Employers
The use of different language	It considers qualifications as the currency for skills.	Prepare graduates to be *"citizens of the world"* (HEI01).	HEIs should prepare students for the world of work and in line with the relevant requirements of the country.	Distinguish between technical and non-technical skills; both are required for graduates to be employable.
The meaning of employability	Employability is sometimes confused with "graduate jobs or jobs that graduates do" Purcell et al., 2003, p.18).	The extent of ease with which a graduate finds employment that suits relevant qualifications.	Refers to the qualities and how much a graduate is a marketable product. *"If there is no market for the selected discipline, the graduate is not relevant or marketable"* (PRA10).	Employability skills refer to having the appropriate and relevant skills for a job and that the person can contribute to the industry with the skills that are required. An ICT degree, vendor qualifications and generic skills would be ideal.
The value of credentials	The regulator (NCFHE) ensures that local qualifications are equivalent, comparable and recognised by HEIs in EU member countries.	The value of higher education qualifications is viewed as degrees that are of a high standard and of quality.	The industry gives value and a premium to the vendor certifications obtained and which training and education provider was used in the market.	An ICT degree is appropriate but vendor certifications are more valued by industry. They demonstrate that graduates have a level of technical skills.
The role of the University	To produce graduates with relevant and recognised qualifications prepared for the labour market so as to obtain earnings.	Overarching purpose is to provide a holistic education. It is to deliver general learning and develop creativity and inquiry in undergraduates. *"It is about creating tomorrow's citizenship and national identity"* (HEI01).	The MCCEI should encourage HEIs and training and education providers to offer vendor certifications.	To supply industry with qualified talent.

[61]The theoretical definitions of the twelve themes are found in Appendix 1.

Perceptions	Views ICT as one of the main pillars of the economy. ICT employability skills are given their due importance.	Recognise the importance of employability skills and believe that giving the students the technical knowledge, application and academic tools is a good basis for employment in the ICT market.	The MCCEI has met with the University to highlight their ICT industry requirements. *"Graduates tend to expect high earnings and come with an attitude of entitlement"* (ICT07).	The HEIs focus on getting students to pass examinations and qualify. The academic courses do not teach the students how to think critically. Graduates lack the generic skills required for the workplace.
Expectations	Expects HEIs to produce graduates needed for the ICT industry.	Collaborate with MITA on various initiatives. They expect MITA to offer student placements to gain work experience, which would complement their academic studies.	The Chamber expects HEIs to prepare students to be 'work ready' on successful completion of their course.	Expect ICT graduates to be prepared for employment.
Competitiveness	/	Should not be subservient to the current jobs market. It is in competition with other foreign education providers offering similar degrees as well as MCAST.	Foreign and local education and training providers offering similar courses and vendor certifications that are in competition with each other.	Compete for skilled ICT graduates and give preference to those who have vendor certifications.
Modes of training provision	/	Introduce different modes of 'training' by inviting guest speakers from industry as well as through group work, student presentations and industry insights.	Education and training providers offer full-time or part-time evening courses which are accredited with the NCFHE.	Send their employees on regular technical training to obtain vendor certifications and keep up to date with technology.
Labour mobility	/	Labour mobility contributes to the ICT graduate's wholesome education and employability.	/	Given the opportunity, graduates would like to gain experience from their mother companies overseas. *"Sometimes we are reluctant to send our staff overseas, because we tend to lose them"* (ICT05).

Placements and incentives	Has organised financial schemes to help individuals receive tax credits for training. Placement opportunities for university students to gain exposure and work experience in the public service during the summer months.	A placement experience is not part of the ICT curriculum. Students enrolling on ICT courses receive a higher stipend than those on accountancy and pharmaceutical technology programmes.	Malta Employers Association encourages employers to offer student placements to gain some work experience before graduation and supports MCAST in their apprenticeship scheme. The Association also supports the incentive schemes related to courses that the Government has introduced.	ICT companies offer student placements and internships to university students after their second year university course, with the intention of offering them full-time employment on completion of their studies. The students are paid over and above their stipend allowance for the 'work' carried out. One organisation actually gives them an allowance *'to stay home.'*
Collaboration	Introduced an employability index for tertiary courses offered by the University on MEA's recommendation.	The ICT Faculty dialogues with MITA, and sits on the Boards of the eSkills (Malta) Foundation and the MCCEI. The Faculty reaches out to industry for sponsorship and helps them advertise their vacancies using the University portals. Practitioners are at times invited to deliver cutting edge talks to the students.	As the MCCEI - ICT section, *"our goal has always been to make industry and University communicate"* (PRA10).	Collaborate with HEIs, MITA and training and education providers.
Skills gaps	Has increased the stipend allowance linked to specific courses, which have been identified as important to the country's needs in order to increase student numbers. For example, science, ICT and nursing degrees.	The ICT Faculty created a master's degree in ICT. Industry prefers a bachelor's degree and vendor certifications. A master's degree does not add more value. Non-technical skills, such as communication skills, are lacking in our students. HEIs' method of assessment is in written form and non-technical skills are embedded in the course.	Education and training providers do not offer courses in non-technical skills.	Find that ICT graduates have a level of technical knowledge, which gives them the job, but they lack the non-technical skills that are essential for the ICT practitioner's role. ICT Industry finds ICT graduates are not ready for the 'job'.

Source: researcher's analysis, compilation and design, 2016

In the context of considerable changes in the labour market and the higher education sector, the discourse on employability has become increasingly predominant. The rapid pace of technological progress makes it very clear that no company can expect any recruit coming out of the education system to have the skills required for the totality of his or her professional life. Education and the acquisition of skills have become a lifelong process, in which academia and business both have to play their part. *"The Faculty of ICT endeavours to always be in a position to maintain standards […] and is represented in several national government bodies and involved with industry partners and multi-national consortia"* (HEI07). Such collaboration is needed to upgrade and update curricula on an ongoing basis.

> *"Innovation and development in the ICT sector take place rapidly; new technologies are updated, if not replaced, in a matter of months. Keeping up-to-date with these changes is one of the greatest challenges of all those operating in this sector, including students and their lecturers"* (Mr. C. Grech, Chairman MITA, cited in a press release 6, December, 2011).

This chapter has presented the main issues that institutional actors face when interpreting, influencing and assigning responsibility regarding skills availability in the labour market. The approach taken has involved focusing on the interlocutors' perceptions of what they perceive are the non-technical skills required by graduates for them to be successful in the labour market. The qualitative research has led to identifying a common set of 'employability skills' which are lacking in new ICT graduates. These findings in relation to non-technical skills gaps should be considered by educators to ensure offerings meet business demand. Further modifications to curricula to reflect these requirements might mitigate the current shortages [and skills gaps] of student enrolments. Some collaborative programmes are taking place in order to address the skills shortages and gaps in the labour market. The outcomes of this qualitative research, which engages with the employability debate, suggests that there needs to be a degree of consensus among institutional actors along with a set of coherent and coordinated initiatives. Chapter 9 discusses the employability themes for the accountancy, pharmachem and ICT sectors and identifies the converging patterns and inconsistencies in these case studies.

Chapter 9: Discussion and Conclusions

> *"These employability skills are the lubricant of our increasingly complex and interconnected workplace. They are not a substitute for specific knowledge and technical skills; but they make a difference between being good at a subject and being good at doing a job."*
>
> Michael Rake, Chairman, UKCES, 2009.

9.1 Introduction

This chapter addresses the research questions with which this study began and assesses the significance and reliability of the findings from the three stages of the study namely: the literature review and methodology, the analysis of skills formation at a national level and the three sectoral case studies. Generalisable conclusions are drawn from the analysis and discussion of these findings. The contribution to the science and practice of public policy from this research is identified and sketches future lines of inquiry.

It is useful to reiterate the research questions (chapter 1):

- How do key institutional actors (referred to as skill formation institutions) seek to interpret, respond to and influence perceived gaps in graduate employability skills:
- What effect do the institutional actors have on the modes of skills provision of graduate employability skills?
- What are the skills policies that contribute to developing a skilled workforce in a continually changing labour market and what influences the choice and content of these policies?
- Which skills gaps are endemic to the graduate labour market?

The chapter presents twenty eight findings that have emerged from the three principal stages of the study, namely, the review of scholarly literature and policy documents; the analysis of Malta's experience of linking development planning,

labour market and higher education policies; and Malta's national skills formation system, explored by means of three case studies.

The themes emerging from the accountancy, pharmachem and ICT case studies, laid out in tabulated summaries (Tables 20, 35, 41), are examined in this chapter, where patterns of convergence and inconsistencies are identified and discussed. The findings reveal the current scenario of graduate employability in these three sectors and lead to an understanding of how institutional actors perceive skills gaps and craft policy responses. These findings have led to generalisable conclusions which could usefully shape skills development policy in Malta and elsewhere. An appraisal of the limitations of this research and recommendations for further research followed by final reflections, concludes the study.

9.2 Findings from the first stage of the study: The literature review and methodology

Globalisation and technological advances have contributed to the emergence of the knowledge economy; they have precipitated changes in labour markets that affect skills acquisition in educational institutions and in the workplace (outlined in chapter 1). 'If there is no investment in skill development, countries cannot compete in a knowledge-based global society' (OECD, 2012). Six findings have emerged from the literature review and methodology.

The **first** finding reveals that there are several definitions and meanings of 'employability' (McQuaid and Lindsay, 2005). They emphasise the importance and relevance of "skills required not only to be employed but to advance within an organisation and successfully contribute to its strategy" (ACER, 2002, p.6). The importance of skills development was demonstrated in the three case studies.

The **second** finding is that individual countries generate different path dependencies for qualifications and skills, with diverse economic, social and political forces being the cause of diverse product regimes. Skill formation systems are "rooted in institutions which reinforce each other, providing institutional comparative advantages" (Martinaitis, 2010, pp.34-35). The thesis has shown how the

institutional structures support the development of different types of skills and how incentives have been devised and offered to graduates and firms to engage and invest in their development. In chapter 3, skills were defined which led to a discussion on institution complementarities. The **third** finding is that different relationships between institutional actors create specific patterns of graduates' transition from tertiary education to employment. Changes in these relationships arising from accession to the EU in turn, have modified the patterns of transition from education to employment.

The **fourth** finding discloses that where policy makers are interested in the transition of graduates from tertiary education to employment, employers seem to be more interested in the acquisition of graduate employability skills. This leads to the existence of different types of skills namely firm, industry and generic (non-technical), [according to Estevez-Abe et al., (2001) theory] with the latter two being considered easily transferable across different sectors of the economy. However, graduate employability skills are not as readily available in the labour market, leading to temporary or endemic skill shortages and gaps in particular economic sectors.

The **fifth** finding reveals that due to these skills shortages and gaps in the labour market, concerned employers "gravitate towards… universities because they are believed to have the best and brightest students" (Brown et al., 2011, p.136). In some cases, foreign graduates are being employed from other countries to fill these gaps. This has been happening in specific sectors particularly the accountancy and ICT sectors in Malta and to a lesser extent in the pharmachem industry, as discussed in the case studies. As a result, certain economic sectors in Malta "expose [graduates] to the full force of the global auction" (Brown et al., 2011, p.136).

Acting on these observations for this study (a) a model of skill formation systems was posited (chapter 4) and (b) applied to investigate the national, sectoral and enterprise dimensions of the process (chapters 5 to 8). In essence, the model consists of the following propositions: Employability skills policies are largely determined by European frameworks which are in turn, heavily influenced by UK and German policies. Policies are downloaded from these countries and adapted accordingly.

The **sixth** finding is that Malta is a policy taker. The process of policy making consists of four sets of actors namely, institutional actors, employability discourses, skills regime and the labour markets which interpret, respond to and influence skills availability in different sectors. These processes play out at the national, sector specific and corporate levels.

Given the ontological and epistemological stance as declared in chapter 4, a reflective interpretative analysis of major policy documents and interviews with elite institutional actors representing government, HEIs, professional associations and employers was adopted. The methodology was applied to investigate:

- firstly, the making, implementation and outcomes of national policy on graduate employability (chapter 5); and
- secondly, the scenarios in three leading economic sectors, namely, accountancy, pharmachem and ICT (chapters 6,7,8).

The research model (chapter 4) enabled the researcher to organise an extensive body of data into coherent narratives of policy processes at work. The economy has transitioned from a state dominated market to a liberalised one and that employability discourses and the skills regime are no different today than the past, as confirmed and recognised by the VoC approach. The researcher was alerted by the historical institutionalist theory to the necessity on the role of the four key sets of institutions over time. There is a distinction between three sets of skills, namely firm, industry and generic or non-technical skills in organisations as explained by Estevez-Abe et al., (2001) theory which helped to guide the researcher in the construction of the three case studies and address the shortages and skills gaps in the different sectors.

9.3 Findings from the second stage of the study: Analysis at the national level

The Malta's national skills formation system, explored by means of three case studies, is the focus of this research. Eleven findings have emerged. Malta is the smallest state in the EU with its own constraints, limited population and yet flourishing with relative prosperity and higher GDP per capita than other member

states. The economies of scale are different to other larger countries. For these reasons, Malta cannot adopt blindly European policies and apply the concept of '*one size fits all*.' This is the **first** finding. Successive governments have pursued policies which identify niche markets in the economy and are more compatible to the Maltese context. Given the severe land constraints and environmental issues, there has been a marked shift from the high land impact of 'heavy' industries, such as shipbuilding repairs/industrial textile manufacturing to service industry, financial services and on-line gaming which have a considerably lower environmental impact.

The **second** finding is that the improvement of skills and qualifications of the Maltese workforce necessitates both a flexible and responsive education system. This has put the role of the University into question. It is built on three pillars, namely, teaching, corporate research and active participation in a sustainable socioeconomic development, whilst also being called on to gear graduates "to engage critically with work" (Mayo, 2013, p.27). There is an increasing focus on the role of higher education in relation to the notion of employability.

The **third** finding is that HEIs do not intrinsically dictate the labour market and cannot guarantee employment outcomes. However, they have the capacity to strengthen the 'likelihood' that graduates will secure appropriate employment and the Government can legitimately expect them to do so.

The public HEIs are funded by Government and whilst they are autonomous, they will always remain subject to pressures and influence. This is the **fourth** finding. The **fifth** finding is that given the substantial public investment, employers expect the state to ensure that graduates are able to enter the labour market well prepared.

The **sixth** finding reveals that Government monitors employment figures but does not focus on employability skills. An increase in the number of graduates does not mean that employers are creating better jobs to absorb an increase in supply. Instead, the **seventh** finding reveals that having a degree is being perceived as an entry ticket to employment rather than a requisite for work and not all graduates are employed in jobs for which they are qualified. Consequently, it is probably more

useful to acknowledge that there is now a range of 'jobs that graduates do' rather than simply 'graduate jobs' (Purcell et al., 2003, p.18).

The **eighth** finding is that employers perceive higher education as a key player in the development of graduates' employability and demand 'work-ready' graduates. "They claim that they are key contributors to the nation's wealth-creation process and are entitled to a say in educational policy-making even though they are passive consumers of the education system" (Ms K. Rudiger, Head of Skills and Policy Campaigns, CIPD 2014, cited by Learning to work - Research Report, 2014, p.1). This leads to the **ninth** finding where Maltese employers understand *'work ready'* to mean a set of desirable attitudes and behaviours for the workplace which echoes Hettich and Landrum, 2014's research. Such skills are generally acquired during work placements and internships rather than an academic environment (*pace* Handel, 2005). In relation to the UK, James et al., (2013, p.957) conclude that "different types of skills can have different sites of formation" a point which is clearly evident from the Maltese experience.

In selecting graduates, Maltese employers factor "a wide array of skills, personality traits and demographic background…" Other considerations include the awarding body/institution, whether it is a vocational or academic qualification and its level. The **tenth** finding is that it assumed that HEIs prepare graduates in technical knowledge and non-technical skills. These skills are embedded in the curriculum in some degree courses and others have a separate study unit where the students are assessed. Graduates, who have the same qualifications and skill sets, may be using different types of skills in various companies. This is noted in James et al.'s (2013, p.957) research and illustrated in the sectoral case study findings in section 9.4.

The **eleventh** finding reveals that new jobs will be created and existing ones will require new skills. The Maltese experience is demonstrating that there is a need "to combine new operational skills with communication, teamwork and problem solving skills as well as business acumen, ICT, foreign language proficiency and cultural awareness. Drivers of change and global trends will shape employment and skill requirements of all employers. In this fast evolving and fluid context, versatility and adaptability are key.

9.4 Findings from the third stage of the study: The sectoral case studies

The tabulated summaries concluding chapters 6, 7, 8 present eleven sectoral findings that emerged from the converging patterns and inconsistencies of the individual case studies. These are organised around twelve themes and reveal patterns as well as inconsistencies and anomalies.

The distinctiveness of each case study brings finely detailed answers to the research questions. This stems from the differing technological, commercial and legal environments within which accountancy, pharmachem and ICT graduates are employed. The accountancy profession operates in an essentially national market, servicing local and foreign clients, and dominated by the 'Big Four' global accounting firms. Pharmacists and chemists employed in the pharmachem industry service global firms operating in regional or world markets. ICT graduates are sought by firms operating in both local and global markets. Accountancy and pharmacy are regulated by law and work within clear professional boundaries; pharmachem graduates work within an exceptionally complex legal environment that is decisively shaped by European legislation. The position of chemistry and ICT graduates is more fluid and ambiguous as they are not regulated professions. The accountancy sector is oriented towards regulation, compliance and corporate services, whereas Pharmachem is oriented towards manufacturing under a strict, regulatory regime. The ICT sector mainly offers design work related to corporate brands. This diversity affects the employability of graduates in the respective sectors, as can be seen from the eleven findings presented below.

Building on this observation, the **first** finding is that the institutional players view and understand **'**employability' differently. Governments seek to ensure that graduates are capable of contributing to the economy. For employers, employability is more about non-technical skills and attitudes than specific competencies to carry out functional tasks (as expressed in many vocational qualifications). As an auditor explained, *"People come in with different skill sets and provided they can contribute and add value to the direction we are going, we consider them to be employable"* (ICT01). HEIs regard employability as the ease with which a graduate finds employment that matches specific qualifications. Pharmaceutical employers and

professional associations consider graduates' ability to carry out particular jobs, willingness to learn and 'fitness' for specific corporate environments. ICT education and training providers look at graduates' qualities and how much they are a 'marketable product', a view embodied in the statement: *"If there is no market for the selected discipline, the graduate is not relevant or marketable"* (ICT15).

The **second** finding discloses the different values given to credentials. The Government considers qualifications to be the currency for skills. The regulators ensure that national qualifications are equivalent, comparable and recognised by HEIs in other EU member states. Degree courses offered by the University of Malta are of a high standard and are valued by employers. Employers in every sector concur that relevant qualifications are necessary to secure an interview: they offer an assurance that graduates have the relevant technical knowledge. Pharmachem employers seem to give greater importance to technical skills, perhaps because their graduates work in highly regulated environments whilst Accountancy and ICT employers make a distinction between technical and non-technical skills and require both.

The **third** finding concerns the perceptions that employers hold of these professions. While the traditional areas of accounting, audit and tax compliance continue to grow, accountancy firms increasingly offer advisory, risk management and internal audit services. *"The accountant has moved from the back room to the board room"* (ACC07). New businesses such as I-gaming, have increased regulation/compliance tasks, widened the accountant's remit and created a demand for specialised accountants. Being a business player rather than testing financial statements requires accountants to have not only technical but non-technical skills so as to interact actively with other professions and work within multi-disciplinary teams. Employers recruit both University and ACCA/ACA graduates, but the latter (professional) qualifications are viewed as adding more value to audit firms than those of the former.

ICT employers place a premium on vendor certifications. The MCCEI encourages private education and training providers to offer vendor training. Accountancy and ICT employers emphasise that credentials are insufficient: "[They] need employees

to be proficient and technically competent … but [they] also need them to communicate, solve problems and be creative" (Minister E. Bartolo, in Times of Malta, 10 August, 2016, p.20). Licensed pharmacists are perceived to be essential assets for specific positions, such as QP, in the pharmaceutical industry, whilst chemistry graduates are generally channelled towards laboratory work.

The **fourth** finding relates to how interlocutors view the role of HEIs. The Government and professional associations consider the University's role in utilitarian terms. *"HEIs should produce graduates with relevant and recognised qualifications for the labour market"* (GOV03). Employers view the tertiary education institutions as sources of future employees, but perceive that few contribute to their skills formation. The University defines its overarching purpose as providing a holistic education that embodies general learning and contributes to the development of the mind. *"It is about creating tomorrow's citizenship and national identity"* (HEI01). It produces students for *"today's jobs, but also creates tomorrow's jobs for our graduates"* (HEI02).

> *"There should not be subservience of a University to the current job market. There are higher education institutions and training colleges that only focus on producing graduates for the job market. MCAST is one of them. This is an important function, but the call of a university is much deeper and broader than that"* (HEI01).

It is not how many students graduate every year that defines this institution. The traditional concept of the University as a centre of education and research is evolving towards "an enterprising University (or academic enterprise) engaging with society and helping transform lives of its citizens, communities, industry, business and the civil and voluntary services" (Varghese and Bartolome Peral, 2012, p.1). Adapting the academic environment to fulfilling global requirements implies giving priority to equipping students with the most important competences such that future graduates will be able to meet those needs.

Employers expect HEIs to produce a work-ready talent pipeline, which is the **fifth** finding. Employers expect graduates *"to be 'work-ready' and hit the ground*

running" (ACC08) on entering the labour market. Pharmachem employers *"not only expect graduates to be qualified, but licensed and willing to learn"* (PHR06). HEIs claim that they give students knowledge and tools to apply in the labour market, but expect employers to train graduates on and for the job.

Employers lament that graduates seem to attend interviews with an attitude of entitlement, demanding high earnings from one company, because a competitor offered a better salary. On the other hand, employer expectations of entry-level graduates can be excessive, extending to the ability to function effectively in the workplace, as confident communicators, good team players, critical thinkers, problem solvers, adaptive and transformative people capable of initiating as well as responding to change (Harvey et al., 1997, cited by Yorke, 2003a, p.4). For their part, HEIs may unreasonably build students' expectations. Students attending labour market information sessions are told what they can become if they graduate from a specific university course. However, many of these roles can only be attained after several years of work experience.

The non-technical skills desired by employers participating in this study and those identified in the employability frameworks (Table 11) are consistent, but the expectations are becoming more specific and specialised. Hence, it seems necessary for employers and HEIs to reconceptualise the non-technical skills and abilities required of a graduate recruit. Nowadays, "graduates are knowledge workers, symbolic analysts, service providers, members of learning organisations and managers of their own careers (Atkins, 1999, p.270). This presents an opportunity to cluster a combination of subject-specific skills and knowledge, with non-technical skills learning.

A high proportion of the interviewees claimed that there is no formal or coherent forum to facilitate collaboration with corresponding academic departments or to bring their issues or suggestions to the table. This is the **sixth** finding. Employers reported that they do not know which door to knock on and when they reach out to the University, it is with limited success. HEIs representatives stated that they try to realise better interactions with industry but it is still left mostly to personal initiative. In contrast to the *ad hoc* nature of these arrangements, employers believe there

should be a catalyst to coordinate all the relevant key players for addressing shortages of graduates and skills gaps.

One way of enhancing graduates' non-technical skills is to adopt a more applied and *'hands-on'* pragmatic approach within the academic curriculum at undergraduate level. The **seventh** finding reveals the different pedagogies used to prepare students for the labour market and the uneven collaboration among the key institutional actors. Different learning methods are adopted by the three disciplines. These sectors offer work placements but are organised differently on account of variations in employment practice, professional regulation and academic requirements.

The **eighth** finding is that the tertiary education and training market is ever more competitive; which is in part, a consequence of the diverging perceptions concerning appropriate skill sets for work-ready graduates. For instance, audit firms employ both ACCA/ACA and M.Accountancy (honours) graduates, but they tend to consider the former as better prepared for the labour market. ICT companies favour graduates who acquire vendor specifications. Graduates holding the different science degrees discussed in chapter 7 seem to compete for comparable employment in pharmachem industry. The Government's economic strategy favours specific sectors to stimulate competition, by offering financial incentives to students to pursue these qualifications.

The **ninth** finding concerns the modes of training provision and targeted Government financial incentives. An employer's needs and the scale, determine the modes of training provision. Small companies do not have the financial means to train their staff. In response to this barrier, a tax credit scheme was devised as an incentive for employers to do so. Originally conceived for ICT companies, the scheme has been extended to other sectors. The modes of training provision vary markedly among the larger organisations in the three focal sectors. They are variously influenced by legislation on issues such as CPD (accountancy), by the pace of technological change (ICT), by regulatory regimes (pharmachem) and by employer (accountancy, pharmachem) or vendor (ICT) preferences.

The better technically prepared skilled graduates are the more marketable and mobile. The **tenth** finding states that employers have different approaches to graduate labour mobility. Audit firms advocate labour mobility and offer their graduates opportunities to work with their counterparts abroad. Audit firms experience high turnover of warranted graduates, generally losing them to industry and not their audit competitors. It is accepted that a certain turnover is healthy for the firms. In contrast, ICT and pharmachem companies view labour mobility as a loss of talent to their competitors. The former are vulnerable to the high demand for and transferable skills of ICT graduates due to the presence of I gaming companies, which do not play by the same market rules. Graduates in pharmaceutical companies tend to leave their employer for better conditions of work or due to company mergers.

The **eleventh** finding pertains to the leading skills gaps found in accountancy, pharmachem and ICT graduates. Whilst this was not "originally" within the scope of this study, it is notable that employers' expectations of technical skills in new accountancy, pharmachem and ICT graduates are shown in Tables 18, 33, 39. The institutional actors' desire of non-technical skills for accountancy, pharmachem and ICT graduates gravitate around communication skills, teamwork and problem-solving. Other cited non-technical skills include creativity, critical thinking, management skills, entrepreneurial skills and leadership. The institutional actors concurred that these skills gaps exist.

With these findings in mind, specific to the study, what are the answers to the research questions postulated at the beginning of the thesis, leading to generalisable conclusions? The next section formulates answers and appraises their reliability.

9.5 Discussion and Conclusions

The research questions focus on the following themes: 9.5.1 - the characteristics of the labour market for graduates; 9.5.2 - the process of the institutional actors who seek to interpret, respond to and influence perceived skills gaps; 9.5.3 - the policy responses; 9.5.4 - the factors influencing the choice and content of these policies; 9.5.5 - the dynamics, effectiveness and determinants of skill formation, and 9.5.6 - the reasons for the persistence of skills gaps in the labour markets.

9.5.1 The labour market for graduates: one market or several?

Conventional policy discourses about the labour market for graduates are based on an unspoken assumption that both 'the labour market' and 'graduates' are undifferentiated. The Maltese experience suggests that complex developments involving the scaling up and the simultaneous segmentation of labour markets and professions are in train [conclusion 1, hereinafter **C1**]. Both the country's on-going strategic shift towards the so-called 'knowledge economy' and accession to the European Union have greatly expanded the dimensions of what was originally a small, well-defined and insular labour market that was serviced by a limited number of professions whose members were trained as 'generalists'. Against that, scientific and technological developments, as well as novel business models have increased the segmentation of labour markets in which graduate employability is determined primarily by technical expertise. The outcomes of the case studies suggest that the greater the scientific orientation of a profession, the greater the likelihood that new graduates will contend with a segmented jobs market [**C2**], as was found in the case of pharmacy. Conversely, the boundaries of labour markets expand when technology (ICT) is universal and there is a more globally networked profession (accountancy). Thus, the graduate employability frameworks which feature prominently throughout this study focus on non-technical skills that transcend the scientific bounds of any single profession or job market. Thus, a newly-minted graduate's employability is determined by a fluid balance of scientific or technical knowledge, on-the-job experience and non-technical skills (intellectual, attitudinal, inter-personal) that

varies from market to market, from one industry segment to another and, at times, from one position to another within the same business segment [**C3**].

9.5.2 Policy-making for employability: strategic planning, disjointed incrementalism or inspired opportunism?

This fluid, kaleidoscopic, labour market scenario presents challenges for the institutional actors, since they influence and shape policy-making intended to promote graduate employability. The four decades of Maltese experience examined in this study revealed both challenges and responses. In the late 1970s, the Maltese economy began expanding and diversifying as a centre for low-cost manufacturing and mass tourism. In the first decade following accession to the European Union, Malta consolidated its position as an *entrepôt* offering a wide range of economic niche markets for high-end manufacturing enterprises and knowledge-based services in finance and ICT.

The policy discourse has consistently employed the rhetoric of comprehensive planning and strategy in matters concerning economic development, employment and education [**C4**]. This much is evident from the dozens of policy documents reviewed in the course of this study and is also evident in the statements made by virtually all the interviewees. However, the worker-student scheme, which was conceived specifically to dovetail economic strategy, employment and higher education, precipitated bitter conflicts which drove apart the Government, HEIs and employers. Partly because of this conflict and partly because the scheme's rigidity prevented rapid adjustment to developments in the labour market, the scheme demonstrated the limits of strategic decision-making as well as the ineffectiveness of comprehensive planning, at least in so far as graduate employability was concerned [**C5**]. The scheme's conception, reform and demise also entailed considerable political challenges associated with pre-existing (academics, employers) and incipient (students benefiting from stipends and cast-iron job guarantees) vested interests.

No sooner had the worker-student scheme been imposed on an unwilling University than policy-making shifted gear and was amended. While the rhetoric of strategic

decision-making and comprehensive planning remains a pronounced feature of a policy discourse, the policy-making processes themselves are animated by the subtle interaction of disjointed incrementalism and inspired opportunism, which is chiefly played out at the sectoral and enterprise levels [**C6**]. The Maltese economic model relies on opportunistic legislative and policy responses to windfalls such as the Bolar provision [**C7**]. In the absence of institutional mechanisms that harness government agencies, HEIs, employers and professional associations to common goals and joint initiatives, employment and higher education remain uncoordinated policy domains [**C8**]. The evidence from the case studies suggests emphatically that graduate employment and employability initiatives are almost invariably catalysed by the ambition of a motivated minister, or a well-connected academic, or the negotiating clout of a major employer [**C9**].

9.5.3 Policy responses: a focus on skills or on credentials?

There is an urgent need to forecast the needs of employers, to make better use of existing skills and for development of the skills that are needed by the labour market. Effective skills strategies are based on three main pillars: the availability of reliable and robust labour market data to identify and analyse current skills gaps; the anticipation of trends and of future needs for skills; and translating this information into actions though the better matching of the supply and demand for skills.

In the absence of a fully articulated and coherent policy-making apparatus that harnesses the perceptions, interests and resources of all the institutional actors (government, HEIs, employers, professions), policy responses to perceived skills gaps tend to be local, limited and contingent [**C10**]. The Maltese experience points emphatically towards this conclusion. One consequence of this is that the standard policy response to perceived skills gaps in both emerging and established economic sectors is the inception of one or more degree/diploma programmes and their corresponding credentials [**C11**]. Inevitably, under this perspective, the policy-makers' focus shifts towards employment, rather than employability. The HEIs' interest lies in curricula and assessment. Employers seek *'work-ready'* graduates although they themselves contribute comparatively little to programme design,

resourcing and delivery [**C12**]. The professions' interest lies in the creation of credentials that will enhance the leverage of new graduates in the labour market.

This orientation towards credentials seems to affect skills gaps in two ways. In the short and medium term, it supplies to the economy, cohorts of graduates whose credentials certify their command of a body of scientific/technical knowledge, but little else. In the long term, however, it seems to neglect the acquisition of the non-technical skills that lie at the heart of the various employability frameworks [**C13**]. Consequently, gaps in the availability of non-technical, *'soft'* skills become endemic to the labour market. One test of this proposition is the fact that present-day employers continue to lament the weakness of communication and creative thinking skills as vociferously as they did in the 1970s [**C14**]. For their part, higher education providers continue to tack the non-technical skills onto their scientific programmes, instead of integrating them through a holistic pedagogy. The result is that employers have had to have various remedies for the deficiencies, ranging from work-study programmes favoured by the accounting firms to the vendor certification resorted to by ICT companies [**C15**].

9.5.4 Factors influencing policy choice and content: market signals, educational philosophy, institutional leadership or chance?

A generation ago, the country devised the worker-student scheme to address concerns about graduate employability in a vulnerable, insular economy on the cusp of *'take-off'*. The scheme precipitated sharp ideological controversy and major political conflict. Employers rejected it and was discarded a mere decade after its inception. Since then, skills regimes have come under the influence of numerous factors that are not easily controlled by governments, nor, indeed, by governments, HEIs, employers and professional associations acting in concert. It could be argued that graduate employability policies are little more than nominal on account of the absence of mechanisms that can secure evidence-based, participatory policy-making [**C16**]. This, however, is only part of the story. The study outcomes reveal a subtler, more dynamic scenario in which shifting combinations of market signals, educational philosophy and institutional leadership and perhaps chance, influence the perception and interpretation of skills gaps, as well as the response to and influence on them

[**C17**]. The broad pattern that emerges from this study indicates that market signals alert policy-makers to the presence of particular skills shortages and gaps as well as shortfalls in graduate employability [**C18**].

HEIs and regulatory authorities, national and supra-national take the lead in designing and implementing skills regimes. The Maltese experience suggests that, even as the market in higher education and training become both more competitive and more closely regulated (by mechanisms such as the Bologna process and ranking schemes), the traditions, status and governance of individual HEIs continue to affect their willingness and ability to respond to such signals, to forge cooperative relationships with business enterprise, and to adopt novel pedagogies [**C19**].

As a microstate, Malta provides evidence that the Government carries the onus of responsibility for vocational education and training of staff members working in microenterprises [**C20**]. Small companies are often unable and reluctant to train their graduates, on account of diseconomies of scale and fear of 'poaching' by competitors. As a result, initiatives are crafted, generally, at the sectoral level (such as the *Get Qualified* scheme) and thus, tend to be too generic and lack specificity [**C21**]. In some instances, particular policies are defeated by design flaws at the micro-level: the effect of the B.Sc. Pharmaceutical Technology (honours) course, which influenced students' preferences on account of its entry requirements, is a case in point.

9.5.5 The dynamics, effectiveness and determinants of skill formation

The effect of Institutional Actors on the modes of employability skills provision

Modes of employability skills provision in HEIs include embedding skills development in learning outcomes of core, discipline-specific units; the creation of 'bolt-on' learning programmes specifically geared to developing employability skills; and student placements and internships incorporated into the undergraduate degree programmes. The University of Malta exercises all these approaches but they are incoherent and unsystematic [**C22**]. In view of the importance of employability skills, it would be expected that HEIs introduce more systematic learning and teaching methods, course content and other measures to address employability.

The fact that employability is a process of learning and not a product means that faculties need to make rigorous and resource-intensive effort to develop sound pedagogical practices in the teaching and learning of employability skills. Many academics find the employability agenda challenging because they perceive the shift in focus from academic inquiry to work-readiness is perceived as devaluing higher education [**C23**]. They are of the view that skills development is more appropriate to industry than the University classroom.

Employers view the University's teaching practices as too theoretical and out of sync with the work environment. "The currently prevailing model seems to favour theoretical over practical knowledge" (Pavlin and Svetlik, 2009, cited by Pavlin 2013, p.10) [**C24**]. Theoretical subjects are important for personal development and a future academic career but practical applications are essential for industry. *"Many lecturers have not worked in industry and are only familiar with the academic world"* (PHR08). Yet the onus is on the HEIs to develop graduates. Employers remain passive takers of future skilled talent [**C25**]. The Government expects HEIs to accept market demands as part of their own agenda and this seems to be causing contention between these institutions regarding what HEIs ought to be delivering in terms of students' capabilities [**C26**].

The effectiveness of policy instruments

This study has highlighted the critical importance of graduate employability skills. The interchangeable use of terminologies [as illustrated in chapter 3] is problematic (*pace* Barrie, 2006), confusing and plagues empirical studies whereby institutional actors' interpretations of the meaning of skills can differ significantly [**C27**]. An example of this diversity of interpretation is what constitutes 'interpersonal skills' and how this relates to team working and communication.

Employability skills which students from higher education providers are expected to master, cannot be identified and defined in the absence of national employability frameworks. This study has proposed employability frameworks (Table 42) for the three sectors that bring out the patterns and divergences of employability skills that employers look for in new graduates. In fact, the three mutual employability skills (not listed in priority order) that accountancy, pharmachem and ICT employers

expect graduates to have acquired are communication skills, teamwork and problem-solving. Another non-technical skill that also came to the fore was creativity **[C28].** Table 42 also gives the WEF framework of employability skills, forecasting the ten important non-technical skills in 2020 in priority order. It is interesting to note the similar skill patterns of these frameworks elicited from the three case studies (2015-2016) and the WEF frameworks, 2015 and 2020. Frameworks can lead to different approaches on employability skill development, which were discussed in the previous section.

Table 42: Comparison of employability frameworks: the Malta study 2015/2016 with the WEF's frameworks for 2015, 2020

Accountancy (Table 19)	**Pharmachem** (Table 34)	**ICT** (Table 40)	**2015**	**2020**
Researcher	Researcher	Researcher	World Economic Forum	World Economic Forum
Accountancy Employers	Pharmachem Employers	ICT Employers	Employers	Employers
Malta	Malta	Malta	World	World
communication skills	**communication skills**	**communication skills**	**complex problem solving**	**complex problem solving**
teamwork	**teamwork**	**teamwork**	**coordinating with others**	**critical thinking**
problem solving	**problem solving**	**problem solving**	**people management**	**creativity**
commercial/business awareness	commercial/business awareness	language skills	critical thinking	people management
language skills	emotional intelligence	commercial/business awareness	negotiation	coordinating with others
Emotional intelligence	professional ethics	emotional intelligence	quality control	emotional intelligence
taking initiative	taking initiative	professional ethics	service orientation	judgement and decision making
professional ethics	language skills	taking initiative	judgement and decision making	service orientation
creativity	*attention to detail*	*creativity*	active listening	negotiation
leadership	*management skills*	*entrepreneurial skills*	creativity	cognitive flexibility

Source: Research findings of this study and World Economic Forum, 2016

Note: The non-technical skills in *italics* were not formally articulated.

Since there are fundamental differences in the understanding of employability by institutional actors this has impeded progress in promoting graduate employability measures. This suggests there is no consensus over the concept of relevant skills [**C29**]. This study has shown how employability skills are viewed differently. The Government considers qualifications as a proxy for skills. "The possession of a degree acts as a labour market signal of ability" (James et al, 2013, p.956). The accountancy and ICT employers in this study viewed non-technical skills as more important than the degree subject studied. *"We would like graduates to handle complex information and communicate it more effectively"* (ACC07).

Employers emphasised the importance of the versatility of skills rather than just specialist subject knowledge and believed that it is HEIs' role. This is not the only role of the University. *"The call of a university is much deeper and broader than that"* (HEI01). Understanding its mission would guide what educational policy decisions need to be taken. The Government is ultimately the University of Malta's main funder and although this institution is officially autonomous, a certain amount of pressure and influence could potentially be exerted in terms of the institution's strategy. The Prime Minister agreed that the Government can exercise its influence but termed it as being *"incentive-driven as opposed to a restrictive form of influence."* Policy instruments include maintenance grants, incentives and opportunities regarding job exposure programmes.

There are inherent difficulties not only in defining what employability skills are but also in their assessment and measurement such as for example, the ambiguous nature of *'emotional intelligence'* or *'initiative*' **[C30].** The Government recently launched the employability index which gives students information and direction on employment prospects, depending on the degrees chosen. In actual fact, this index is about employment and not employability [**C31**]. It is intended to improve information given to students rather than requiring the University to change its strategies regarding employability. Whether this index has served its purpose is yet to be seen for it is not clear whether graduates refer to the index when making their career choices. Government within the political arena is always under pressure to reduce unemployment and gives higher priority to the reduction in employment figures which are more tangible and have an immediate impact, as opposed to focusing on employability. On

the other hand, employers have a different agenda and are more concerned with finding the relevant employability skills.

Another important policy in higher education is the 'assurance of learning' through certification by the accrediting body, NCFHE. This Commission ensures that educational courses provide learning outcomes and skills development for all undergraduate degree programmes and that these qualifications are recognised in other member states. This policy has made enrolments at overseas Universities for further studies easier.

Finally, skills have become more visible through reviewing and improving the common European tools, such as the European qualifications framework and the Europass (Appendix 17). They make it easier to understand qualifications and help people move between different types of learning and across borders.

Final determinants of skills formation

> "Given today's speed of change in technologies and business in general, no education system can provide the appropriate talents in the long run; this implies that corporations should invest in training and education… which calls for partnerships with universities" (WEF, 2010, p.27).

The proactive design of skills formation takes place when there is collaboration among institutional actors and inter-relations among institutions. The more developed the relationship between the HEIs and employers, the higher the presence of skills. The inclusion of industry placements in a course curriculum gives students the opportunity to develop technical and non-technical skills at the work place. These synergies contribute to developing graduate employability skills. Where these *ad hoc* initiatives are commendable, there is no overarching collaborative system [**C32**].

Developing skills cannot be a linear extrapolation. EU legislation affects skill requirements which are fluid and volatile. For instance, a change to the tax harmonisation agreement could impinge on the different sectors in Malta and trends would be altered. The Government is developing trade deals with non-EU companies, which are setting up in Malta offering skilled jobs. For example, a US company is setting up shop in Malta. It claims it would create three hundred jobs and needs the

relevant skill sets. An IT company that set up shop in Malta in 1996, slowly incubated, germinated and nurtured graduates from within the labour market. Over time, skills were available. There was a response time to address its skills requirements. New companies relocating to Malta need the formation of skills institutions to be fast, responsive and forward looking.

In the accountancy world, two influential and intensely competitive skills providers are the MIA and the Department of Accountancy. The MIA has a strong presence in the market. Students are employed by audit firms and receive ACCA/ACA study sponsorships with training providers. They may choose to read for a degree in M. Accountancy and are approached by audit firms to 'work' during their summer recess. This is similar to IT companies. In other disciplines, it is the Department that organises and coordinates these work placements for students. It can be surmised that in different contexts, the final determinant of skills formation varies [**C33**].

9.5.6 Endemic skills gaps

Organisations will always experience skills gaps if they are staying ahead of shifting conditions in their environment and clients' changing expectations. The underlying causes of skills gaps are that firstly, jobs are changing to requiring more knowledge work, teamwork and better use of technology, and secondly, educational attainment in Malta has fallen behind the nation's need for skills [**C34**]. "The skills gaps demand a need for high-skilled people to fill skill-intensive jobs" (Carnevale, cited by Galagan, 2009, p.62).

MCAST's mission, unlike the University, contemplates a close link to the local economy which increases the sensitivity and responsiveness to the labour market [**C35**]. Private institutions show concern with employability and have tighter relationships with industrial sectors as a strategy to attract students while private employers entice graduates by giving them an additional guarantee of the likelihood of getting a job after graduation.

A better understanding of the interacting forces which influence undergraduate skills development would enable institutional actors to identify and implement measures to enhance skill outcomes so as to bridge endemic undergraduate skills gaps. The

Government views skills as crucial for the economy to reach new heights. Consequently, the national employee survey 2016 would need to be repeated in a few years' time to compare results.

9.5.7 Looking beyond country and case studies: a summary of generalisable conclusions

The foregoing discussion addressed the research questions of this study. It reveals conclusions whose applicability may well transcend this study of Malta and the three sectoral case studies. They may be especially relevant to countries that are similar to Malta in terms of their scale, developmental trajectory, educational system and labour markets. They also shed light on the particularity of employability policies and skills regimes applying in different labour markets.

The labour market for graduates: one market or several?

1. Investigations into labour market policies and employability must take account of complex developments, involving the scaling up and the simultaneous segmentation of labour markets and professions are in progress.
2. The outcomes of the case studies suggest that the greater the scientific orientation of a profession, the greater the likelihood that new graduates will contend with a segmented jobs market.
3. A newly-minted graduate's employability is determined by a fluid balance of scientific or technical knowledge, on-the-job experience and non-technical skills (intellectual, attitudinal, inter-personal) that varies from market to market, from one industry segment to another and, at times, from one position to another within the same business segment.

How do key Institutional actors (referred to as skill formation institutions) seek to interpret, respond to and influence perceived gaps in graduate employability skills?

Policy-making for employability: strategic planning, disjointed incrementalism or inspired opportunism?

4. Policy discourses consistently employ the rhetoric of comprehensive planning and strategy in matters concerning economic development, employment and education.

5. National educational policies may precipitate bitter conflicts which drive apart the Government, HEIs and employers. The outcomes of such policies also demonstrate the limits of strategic decision-making as well as the ineffectiveness of comprehensive planning in graduate employability.
6. The policy-making processes themselves are animated by the subtle interaction of disjointed incrementalism and inspired opportunism, played out at the sectoral and enterprise levels.
7. An economic model that relies on opportunistic legislative and policy responses to windfalls requires a nimble response by governments, HEIs and enterprises to sudden, major demands for particular categories of graduates.
8. Institutional rigidities and rivalries will result in chronically uncoordinated employment and higher education domains.
9. In a small, highly personalised society, graduate employment and employability initiatives are almost invariably catalysed by the ambition of a motivated minister, or a well-connected academic, or the negotiating clout of a major employer.

What are the skills policies that contribute to developing a skilled workforce in a continually changing labour market?

Policy responses: a focus on skills or on credentials?

10. In the absence of a fully articulated and coherent policy-making apparatus that harnesses the perceptions, interests and resources of all the institutional actors (government, HEIs, employers, professions), policy responses to perceived skills gaps tend to be local, limited and contingent.
11. The likely policy response to perceived skills gaps in both emerging and established economic sectors is the inception of one or more degree/diploma programmes and their corresponding credentials.
12. The policy-makers' focus shifts towards employment, rather than employability. The HEIs' interest lies in curricula and assessment. Employers seek 'work-ready' graduates although they themselves appear to contribute comparatively little to programme design, resourcing and delivery.
13. Cohorts of graduates supplying the economy in the short and medium term, have credentials which certify their command of a body of scientific/technical knowledge, but little else. In the long term, however, it seems to neglect the

acquisition of the non-technical skills that lie at the heart of the various employability frameworks.

14. Employers continue to lament the weakness of communication skills, teamwork, problem solving and creative thinking skills in graduates.
15. Employers adopt various remedies for the deficiencies, ranging from work-study programmes favoured by the accounting firms to vendor certifications resorted to by ICT companies.

What influences the choice and content of these policies?

Factors influencing policy choice and content: market signals, educational philosophy, institutional leadership or chance?

16. In small states, graduate employability policies are likely to be little more than nominal on account of the absence of mechanisms that can secure evidence-based, participatory policy-making.
17. Shifting combinations of market signals, educational philosophy and institutional leadership and perhaps chance, influence the perception and interpretation of skills gaps, as well as the response to and influence on them.
18. Market signals alert policy-makers to the presence of particular skills shortages and gaps as well as shortfalls in graduate employability.
19. The traditions, status and governance of individual HEIs tend to affect their willingness and ability to respond to such signals, to forge cooperative relationships with business enterprise, and to adopt novel pedagogies.
20. The onus of responsibility for vocational education and training of staff members working in micro-enterprises tends to be carried by the Government.
21. Employability initiatives are crafted, generally, at the sectoral level and tend to be too generic and lack specificity.

The effect of Institutional Actors on the modes of employability skills provision

22. The experience of the University of Malta suggests that there are circumstances where a national institution exercises approaches but remain incoherent and unsystematic.
23. Many academics find the employability agenda challenging because they perceive the shift in focus from academic inquiry to work-readiness as devaluing higher education.

24. The study emphatically confirms the already well-known fact that employers view university teaching practices as too theoretical and out of sync with the work environment (c.f. for example Pavlin and Svetlik, 2009, cited by Pavlin 2013, p.10).
25. The onus is on the HEIs to develop graduates. Employers remain passive takers of future skilled talent.
26. Where governments expect HEIs to accept market demands as part of their own agenda, this seems to cause contention between these institutions regarding what HEIs ought to be delivering in terms of students' capabilities.

The effectiveness of policy instruments

27. The variability of the terminology about employability is problematic, confusing and plagues empirical studies.
28. There are inherent difficulties not only in defining what employability skills are but also in their assessment and measurement
29. Only four employability skills - communication skills, teamwork, problem-solving and creativity – seem to be valued across different labour markets and economic sectors.
30. There is no consensus over technical and non-technical skills applicable across the labour market.
31. Employability indices may well be measuring employment and not employability.

Final determinants of skills formation

32. There is a risk that in the absence of an overarching collaborative system, initiatives would be taken as hoc.
33. In developing skills formation policies or regimes, there is a certain tension between EU legislation and domestic circumstances which are fluid and volatile in a small country. In different contexts, the final determinant of skills formation varies.

Which skill gaps are endemic to the graduate labour market?

Endemic skills gaps

34. The underlying causes of skills gaps are that jobs are changing, requiring more knowledge work, teamwork and better use of technology, and enhanced educational attainment.
35. It appears that HEIs which are recently established, cultivate a closer link to the local economy which increases the sensitivity and responsiveness to the labour market.

9.6 Contribution to the science and practice of public policy from the study: Implications for graduate employability

This thesis has disclosed the intricate, fluid and uncertain characteristics of policy making in relation to graduate employability. In the absence of base line studies, this research is breaking new ground. These research outcomes have shown how diverse skill development approaches can be. As illustrated in this study, there is not one single template for making policy. Similarly, there is no overarching mechanism for creating efficient policies to give meaningful outcomes. Malta's small scale facilitates a drect inter-relationship between higher education institutions and the Government. Policies can play an important role in fostering the required stable relationships between firms and HEIs as well as with the other relevant actors (i.e. Government, professional and industry associations).

The analytical framework in this study can assist policy makers, HEIs, professional associations and employers in properly identifying and supplying the specific skills required for developing and exploiting the growth and jobs potential of the three focal knowledge intensive sectors.

The roles attributed to the different institutional actors were examined. The HEIs assume a leadership role in the knowledge economy and have the responsibility of equipping future graduates with the required competence and skills. They consider themselves as the main agents in relation to the development of student employability. The findings have indicated that academics tend to assume the responsibility for employability and claim that the development of non-technical skills is embedded in

academic courses. However, there is a concern that the University would be reduced to "a set of technical skills and a factual knowledge… rather than the development of the mind" (HEFCE, 2011, p.415) if it was simply market oriented. Employers have a different view whereby they expect the University to share the knowledge creation process with companies in a collaborative and cooperative manner in the form of intellectual capital expanding their functional environment.

The development of skills is perceived as a key outcome of university-business collaboration. *"Collaboration includes lecturers who are also practitioners presenting industry-specific case studies so that students can begin to get the 'feel' of an organisation which may eventually lead to an internship or work placement"* (PRA04). It seems that the traditional concept of the University as the centre of education and research is changing. It has become a place of 'engaged learning' or an 'engaged institution' which resonates with Leodis's 2012 study, in which it is contended that the priority is to equip students with the relevant skills required to meet local and global requirements. *"The University should be consulted on shaping our labour market and discussing the skills we need for the labour market"* (PRA01).

There are diverse forms of university-business cooperation. These include research and technological development and governance-related collaborations. Such cooperation policies would demand effective communication, integration of institutional actors and legal support. Common goals, needs and aims, commitment by the key representatives of the institutional actors and a shared understanding of the challenges would facilitate this.

Interlocutors stated employers and academics think differently. Employees are described as market oriented, whereas people from the world of academia are primarily engaged in the creation and dissemination of research. *"University's priority is to publish research results… The researchers' work is measured by the number of publications and not its practical outcome"* (HEI08). There is a need for greater institutional support to facilitate dialogue between the two spheres.

Malta needs to think beyond its national boundary and consider skills to have value across the globe. "Stronger investment in skills is vital for strengthening competitiveness and boosting growth" (Ms M. Thyssen, Commissioner for

Employment, Social Affairs, Skills and Labour Mobility). "40% of European employers report that they cannot find people with the right skills to grow and innovate" (EU Skills Agenda, 10 June, 2016). Tertiary education and research are the route to higher skills and levels of innovation, making communication between the education sector and business essential for fostering innovation capacity.

The sectors in this study still face structural and persistent skills gaps and shortages. Different key actors in the education-to-work process generally fail to engage in deep-rooted and ongoing collaboration to communicate skill needs, develop curricula and share the delivery of education and training in HEIs and at the workplace. Employers, education providers and students tend to live in parallel universes and are not engaged with each other. Cooperation of all relevant actors in managing education and training systems, along with the continuous adaptation of curricula, contributes to a greater and more rapid responsiveness to the changing skill demands.

9.7 Limitations and recommendations for further research

9.7.1 Methodological limitations

This exploratory study involved focusing on institutional actors' perceptions of employability skills and skills gaps in the labour market. It is not a quantitative analysis where skills gaps are measured. Graduates were not consulted as to what they consider are the employability skills required for employment. This methodology traded depth for breath (Patton, 2002, p.227). Case study analysis was used to understand the details and allow for comparative analysis. Given the size of the employers' sample and its composition, the research does not generalise the findings to the entire sectors but only to the larger ones namely Accountancy, Pharmachem and ICT employers. The case study approach was limited to three sectors and others, which may be of relevance, were ignored. The research needs to be extended to encompass more sectors. The anticipated limitations highlighted in chapter 4 were confirmed.

9.7.2 Recommendations

In the broad policy context, establishing an open dialogue platform within the government, with the participation of industry and university representatives, would support the decision-making process. At the national level, the minister responsible for

education and employment policies should be encouraged to interact with the ministers for industry and competitiveness so as to increase awareness of the changes occurring in organisations and firms in order to create synergies and avoid duplication.

Business skills policy could be optimised by social dialogue between employee representatives and employers. Unions should become more involved in ensuring that learning opportunities exist in the workplace. Identifying good practice and supporting workplace learning is an essential function of trade union representatives in partnership with employers. Union cooperation with the Government and employers facilitates access to workplace learning and the financial support needed to participate in training and placement programmes.

One way forward would be to devise specific policy measures to induce, reinforce and consolidate the required positive interactions between university and industry. The evidence suggests that businesses do not consult academics or academic research findings when developing management strategies and practices. It is apparent that the situation demands new ways of knowledge creation and implementation process.

Policy makers need more information and empirical evidence about the main drivers and barriers of firms' training activities when considering the design of support measures to the specific contribution of firms in addressing skills gaps. Regular surveys would contribute valuable data on skills and capabilities. For instance, the employability index should be an ongoing exercise so as to enable the social partners to design constructive educational, career oriented policies in future, which will contribute to a higher return on the investment in education and the efficient utilisation of our human resources. To complement this index, tracking graduates in employment would provide essential information on how they progress in the labour market. The collection of information on graduates' career trajectory would enable educational institutions to be quicker at discerning any emerging needs in relation to adapting the curriculum.

HEIs have similar objectives across Europe. A sub-group of universities in member states' should gather evidence on what sort of education works in an international context, what professional skills students need and what kind of careers they develop. This group could produce a blueprint of how study units in a European university can be

developed and what the qualities of students should be. A smaller more focused model would be more suitable in order to produce similar outcomes.

One area that seems to be a growing sector is on-line education and Malta may consider establishing a foothold in this global industry. It should aim to attract global online education providers to set up in Malta and potentially license their courses. This could be a consideration for HEIs to offer e-learning courses. This may be challenging especially in terms of acceptance of programme certification and recognition. On the other hand, Malta is acknowledging advancements in education and may consider the development of new e-learning courses in specific sectors such as ICT as a way forward to improving graduate employability skills in Malta.

Companies in Malta would benefit by tapping the immigrants' talent pool in order to fill the labour shortages and skills gaps in the workforce. "There is a small group of highly educated refugees…Some refugees have been entrepreneurs in their native countries" (Millner, 2016, cited by Malta Profile 2016, p.1). EY's Attractiveness Survey, (2015, p.33) proposed that "Malta could take a path-breaking step by surveying immigrants' skills and turning relevant skilled refugees into productive employees."

9.8 Final reflections

Malta's socioeconomic nature, following EU accession was totally reoriented from that of an insular and peripheral island state (with a limited economy) to one that has capitalised on opportunities emanating from its membership. Once the borders were opened, controls were reduced and the freedom of mobility in the labour market took place, the debate on employability and skills issues became more complex, multidimensional and subject to multiple variables.

What has emerged from this study is that the scenario is very fluid and subject to shifts. The response to employability skills formation and development has to be rapid. This cannot take the form of a fixed plan, but rather should be seen as a process which has in-built flexibility so as to be able to respond to these market forces.

Malta positioned itself with a local market, but has now reached a stage where, due to the fast-paced economy, the skills gaps and shortages of skilled labour, employers have resorted to importing foreign skills. This discourse on training and skills formation goes beyond Malta's educational institutions graduate supply. There is no neat solution. The skills gaps and shortages can be mitigated or improved and contained but will never be entirely solved.

> *"With the changing world and new technologies, ideas and systems, I think it is a 'challenge' we have to live with and would continually need to adapt. Rather than aspiring not to have skills gaps, we should aim to tackle the gaps in the fastest way possible"* (Prime Minister).

Addressing this challenge requires forceful and forward-thinking leadership from policy makers. An important challenge is having *"a proper attitude and suitable aptitude which a workforce needs to compete in the world market irrespective of how much theoretical knowledge has been learnt"* (HEI01). There needs to be a mind-set shift from being employees of FDI and developing the 'predicted' skills that are needed for future jobs to creating ideas for start-up companies. *"We want to make our graduates, employers of tomorrow's future"* (HEI01). There is a need to inculcate a mentality of world vision. *"Graduates are not world aware. They need to experience the world"* (HEI01). The competition for skills in the labour market is continually increasing. *"Graduates would need to reinvent themselves again and again if they want to survive the competition"* (HEI01).

The market is in a perpetual state of flux, giving rise to skills gaps and shortages which can only be addressed by bold and creative policies. There cannot be a universal template for different sectors, as skills need to be tailor-made to the specific sectoral requirements as emerging on the market. A starting point is to consolidate collaboration involving all the institutional actors with an employability-skills agenda. However, ultimately, the educators' agenda can never be fully equated with that of the employers'. For as the pro-rector stated during the interview: *"We are in the business of forming minds and not of creating employees."*

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Appendices

Appendix 1: Theoretical Definitions of Themes

Themes	Definitions from scholarly literature (where applicable)
The use of different language	Different meanings given to employability skills defined by the four institutional actors.
The meaning of employability	"Employability, at an individual level, is a set of achievements - skills, understandings and personal attributes - that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy" (Yorke, 2003b p. 479; Moreau et al. 2006 p.7). This emphasizes the importance and relevance of employability skills which are defined as "skills required not only to be employed but to advance within an organisation and successfully contribute to its strategy" (ACER, 2002, p.6).
The value of credentials	The value of credentials refers to the importance given by the institutional actors towards proof of a qualification or competence issued to an individual with the authority to do so.
The role of the University	The role of the University is to "work to attract and nurture the most promising and creative minds It nurtures the hopes of the world: in solving challenges that cross borders; in unlocking and harnessing new knowledge; in building cultural and political understanding; and in modelling environments that promote dialogue and debate" (Harvard President Drew Faust, 2010).
Perceptions	Perceptions are the way institutional actors view employability skills which help undergraduates /new graduates to be employable.
Expectations	Expectations refer to the employability skills that graduates are expected to have on successful completion of their University degree.
Competitiveness	Competitiveness is the contribution of human resources to economic competitiveness is determined by the size and skills of the labour force and the flexibility of the labour market.
Modes of training provision	Modes of training is a set of a systematic processes designed to meet learning objectives related to trainees' current or future jobs. Available from: http://www.referenceforbusiness.com/management/Tr-Z/Training-Delivery-Methods.html [Accessed 21 July 2016].
Labour mobility	It is the extent to which the workers are able or willing to move between different jobs, occupations, and geographical areas. It is called horizontal mobility if it does not result in a change in the worker's grading or status, and vertical mobility if it does. Skilled workers have low occupational mobility but high geographical mobility. Available from: http://www.businessdictionary.com/definition/mobility-of-labor.html [Accessed 21/07/2016].
Placements and incentives	Work placements are opportunities to spend periods of time in employment relevant to the degree programme. Incentives are schemes that encourage persons to do something or to work harder. Available from: http://www.merriam-webster.com/dictionary/incentive [Accessed 21/07/2016].
Collaboration	Collaboration is a cooperative arrangement where two or more parties work jointly towards a common goal.
Skills gaps	A skills gap is the difference in the skills required on the job and those actually possessed by the employees. A skill gap arises when higher Education Institutions struggle to keep pace with economic growth, causing market failures.

Source: Extracts from Scholarly literature, 2016

Appendix 2: List of Institutions and Interlocutors' Codes of reference

	Interlocutors	Institution/Institutional Actors	Code
GOVERNMENT			
1	The Prime Minister	Government of Malta	GOV01
2	Principal Permanent Secretary	Public Service	GOV02
3	Permanent Secretary	Education and Employment	GOV03
4	Anonymous interviewee	Finance	GOV04
5	Accountant General	Treasury Department	GOV05
6	**Chairman**	Employment and Training Corporation (changed to JobsPlus)	GOV06
7	Permanent Secretary	Health	GOV07
8	Anonymous interviewee	Employment and Training Corporation (changed to JobsPlus)	GOV08
9	Chief Executive Officer	National Commission for Further and Higher Education (NCFHE)	GOV09
10	Head, Investment Promotion	Malta Enterprise (ME)	GOV10
11	**Human Resource Manager**	Malta Financial Services Authority (MFSA)	GOV11
12	Anonymous interviewee	Medicines Authority	GOV12
13	Anonymous interviewee	Directorate of Pharmaceutical Affairs	GOV13
14	Anonymous interviewee	MITA	GOV14
15	**Chief Administrator**	eSkills (Malta) Foundation	GOV15
16	Chief Executive Officer	Employment and Training Corporation	GOV16
HIGHER EDUCATION INSTITUTIONS			
17	Rector	University of Malta	HEI01
18	Pro-Rector	University of Malta	HEI02
19	CEO and Principal	MCAST	HEI03
20	Anonymous interviewee	Institute of ICT, MCAST	HEI04
21	Anonymous interviewee	Institute of Applied Sciences, MCAST	HEI05
22	**Dean**	Faculty of Economics, Management and Accountancy	HEI06
23	Dean	Faculty of Information and Communications Technology	HEI07
24	**Head**	Department of Accountancy	HEI08
25	Head	Department of Pharmacy	HEI09
26	Head	Department of Chemistry	HEI10
27	Professor	Coordinator of Pharmacotoxicology	HEI11
28	Senior Lecturer	Department of Chemistry	HEI12
29	Professor	Department of Sociology	HEI13
PROFESSIONAL ASSOCIATIONS			
30	President	Confederation of Malta Trade Unions (CMTU)	PRA01
31	**Secretary General**	GWU	PRA03
32	Secretary General	UHM	PRA04
33	**Anonymous interviewee**	Malta Institute of Accountants (MIA)	PRA07
34	Anonymous interviewee	Richard Clarke Academy (RCA)	PRA08
35	**Anonymous interviewee**	AIM Professional Academy (ex-BPP Education)	PRA09
36	Anonymous interviewee	PWC Academy, ICT	PRA10
37	Anonymous interviewee	Malta College of Pharmacy Practice (MCPP)	PRA11
38	Anonymous interviewee	Chamber of Commerce, Enterprise and Industry, IT Software and Electronics section	EMP01
39	Member	Malta Chamber of Commerce, Enterprise and Industry, Importers, Distributors and Retailers section	EMP02
40	Chairperson	Malta Chamber of Commerce, Enterprise and	EMP03

		Industry – Education section	
41	**Director General**	Malta Employers Association (MEA)	EMP04
42	Director General	Malta Chamber of Commerce, Enterprise and Industry	EMP05
43	Anonymous interviewee	Chamber of Pharmacists	EMP06
44	Director	Advise Ltd	EMP07
ACCOUNTANCY EMPLOYERS			
45	**Chief Executive Officer**	Deloitte	ACC01
46	**Anonymous interviewee**	Audit, Deloitte	ACC02
47	**Anonymous interviewee**	Ernst and Young	ACC03
48	Anonymous interviewee	Ernst and Young	ACC04
49	Territory Senior Partner	PWC	ACC05
50	Anonymous interviewee	PWC	ACC06
51	Senior Partner	KPMG	ACC07
52	Anonymous interviewee	KPMG	ACC08
PHARMACHEM EMPLOYERS			
53	Anonymous interviewee	Actavis (Malta) Ltd	PHR01
54	Anonymous interviewee	DiPharma (Amino Chemicals) Ltd	PHR02
55	Managing Director	Aurobindo APL Swift Services (Malta) ltd	PHR03
56	Operations and Business Development Director	Pharmadox Healthcare Ltd	PHR04
57	Anonymous interviewee	Siegfried (Malta) Ltd	PHR05
58	Anonymous interviewee	Starpharma Ltd	PHR06
59	Anonymous interviewee	Sterling Chemical (Malta) Ltd	PHR07
60	Director	ASG Pharma Ltd	PHR08
61	Vice President	European Industrial Pharmacists Group (EIPG)	PHR09
ICT EMPLOYERS			
62	Chief Technical Officer & Director	Ascent Software Ltd	ICT01
63	Anonymous interviewee	Exigy Ltd	ICT02
64	Anonymous interviewee	ICT Computer Solutions Ltd	ICT03
65	Chief Officer	Loqus Group	ICT04
66	Anonymous interviewee	KPMG Crimsonwing	ICT05
67	HR Manager	6PM Holdings plc	ICT06
68	Anonymous interviewee	Computime Ltd	ICT07
69	Anonymous interviewee	RS2	ICT08
70	Anonymous interviewee	Tek IT Experts (Malta) Ltd	ICT09

Source: author's compilation, 2016

Note:

- Twelve interlocutors (bold) participated in the pilot study.
- Interlocutors who had no objection to being identified held these positions on the date of their interviews and are referred to as such, even if they have changed to other positions following the interviews.
- Thirty out of seventy interlocutors did not give permission to disclose their identity.

Appendix 3: Template Letter of Introduction

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Dr Joseph Muscat
Prime Minister
Office of the Prime Minister
Auberge de Castille
Castille Place
Valletta, VLT2000

22 April 2015

Dear Dr Muscat

Letter of Introduction: requesting an interview

I am currently working on my PhD thesis at the Department of Social and Policy Sciences, University of Bath, UK on the subject of how institutional actors interpret, respond to and influence skills gaps in graduate employability in Malta. I am in the process of carrying out a number of elite interviewing sessions with key institutional actors.

I would very much appreciate if you would kindly accept to be interviewed on this subject in June or July 2015. The interview should not last more than an hour and will be audio recorded with your permission. This is voluntary and should you decide to withdraw your participation at any time for whatever reason, all data would be destroyed.

Findings from the interview will be used for my thesis may also be published. If you have any reservations, please let me know. You may wish to let me know your availability at your convenience.

Yours sincerely

Anne Marie Thake
Ph.D. candidate
University of Bath (UK)

Appendix 4: Official Documentation

Title of the Document	Author	Type of Document	Date of Publication
Supranational Documents – European Union			
Investing in the Future of Jobs and Skills Scenarios, implications and options in anticipation of future skills and knowledge needs	European Commission, Directorate General Employment, Social Affairs and Equal Opportunities	Report	2009
New skills and jobs in Europe: Pathways towards full employment	European Commission, Directorate General for Research and Innovation	Document	2012
Rethinking Education: Investing in skills for better socio-economic outcomes; Rethinking Education: Country Analysis, Part I	Communication from the Commission	Documents	2012
Transferability of Skills across Economic Sectors 2007-2013 Transferability of Skills across Economic Sectors – Annexes	European Union Programme for Employment and Social Solidarity	Report	2013
Special Barometer 417 European Area of Skills and Qualifications	TNS Political and Social at the request of the European Commission, Directorate-General for Education and Culture	Report	2014
The European Foundational ICT Body of Knowledge – Version 1.0	European Commission – Directorate Internal Market, Industry, Entrepreneurship and SMEs	Document	2015
National Documents – The State			
Development Plan for the Maltese Islands 1959-1964 (known as the First Development Plan)	Office of the Prime Minister	Publication	1959
Development Plan for the Maltese Islands 1964-1969 (known as the Second Development Plan)	Office of the Prime Minister	Publication	1964
Development Plan for the Maltese Islands 1969-1974 (known as the Third Development Plan)	Office of the Prime Minister	Publication	1970
Seven Year Development Plan for Malta 1973-1980 (known as the Fourth Development Plan)	Office of the Prime Minister	Publication	1974

Malta - Guidelines for Progress: Development Plan 1981-1985 (known as the Fifth Development Plan)	Economic Division Office of the Prime Minister	Publication	1981
Education Act XXIV of 1988, Chapter 327	Laws of Malta	Law	1988
Education in Malta: A Look to the Future	UNESCO	Publication	1988
Education's Role in the Socioeconomic Development of Malta	Dr Carmen M. Caruana	Publication	1992
Education in Malta	Mr J. Zammit Mangion (former Director of Education)	Publication	1992
Education and National Development: Historical and Critical Perspectives on Vocational Schooling in Malta	Professor Ronald Sultana	Publication	1992
Malta – An Island of Transition; The Economic Transformation of Malta from A British Crown Colony to an Independent Democratic State; Maltese Economic History 1954-1997	Mr. Edward J. Spiteri	Publication	1997
Employment and Training Corporation's Annual Report	Employment and Training Corporation	Report	1999 – 2000
Joint Assessment of the Employment Policy Priorities of Malta 2001	Employment and Training Corporation	Report	2001
State Higher Education Funding (known as the Chalmers Report)	State Higher Education Funding Working Group – Ministry of Education, Youth and Employment	Report	2004
The Direct and Indirect Impact of Malta's Accession to the EU on post-secondary and tertiary institutions in Malta and Gozo and the students attending or planning to attend thereafter	Ministry of Education, Youth and Employment	Report	2004
Human Resource Development Report 2003-2006	Employment and Training Corporation	Document	2006
Skills for the Future 2008	National Commission for Higher Education	Report	2009
Tracer study of the Graduating Workforce	Professor Godfrey Baldacchino (ed.)	Publication	2009
Malta's National Reform Programme - the Europe 2020 Strategy	Ministry of Finance, the Economy and Investment	Report	2011
Bologna Process Implementation (NCFHE)	NCFHE – Dr. Joachim, James Calleja	Report	2012
Malta National Lifelong Learning Strategy 2020	Ministry for Education and Employment	Policy Document	2013
Employment and Training Corporation Annual Report	Ministry for Education and Employment	Report	2013
Further and Higher Education Statistics 2012; Report of the Survey held by the NCFHE	National Commission for Further and Higher Education	Report	2013
The National Employment Policy	Ministry for Education and Employment	Policy Document	2014
Annual Report, National Commission for Further and Higher Education	National Commission for Further and Higher Education	Report	2014
Further and Higher Education Statistics 2013-2014	National Commission for Further and Higher Education	Report	2014
Higher Education Strategy for Malta - Within the context of the Further and Higher Education Strategy 2020 (NCHE, 2009) and the framework for the Education Strategy for Malta 2015-2024	Ministry for Education and Employment	Publication	2015
The Employability Index Report, 2015	Ministry for Education and Employment	Report	2015

Higher Education Institution Documents			
The Royal University of Malta Commission, The XVth Report	Royal University of Malta Commission (R. Dahrendorf PhD)	Report	1973
The Reform of the University, 1978	Office of the Prime Minister	White paper	1978
Report: Evaluation of the Worker-Student Scheme (1981-1985)	University of Malta	Report	1985
Report of the Students Selection Board (1986-1987)	University of Malta	Report	1987
A Strategic Plan for the University of Malta (Shattock Report)	Warwick Higher Education Group (Dr Michael Shattock)	Document	1990
L-Universita' Lejlet is-Sena 2000	Commission set up by the Leader of the Opposition	Report	1993
University of Malta Annual Reports from 1997 to 2007	University of Malta	Report	1998 to 2007
Socio-Economic Considerations - Educational Support Schemes in Malta	Student Stipend Scheme Commission - Professor E.P. Delia	Report	1999
Student Stipend Scheme	Student Stipend Scheme Commission	Report	1999
University of Malta: Strategic Development Plan 2002-2006	University of Malta	Report	2003
The Impact of the Bologna Process on HEIs in Malta	Bologna Experts Group Malta 2008-2009	Report	2009
2010 Vision or Optical Illusion?	Rector, University of Malta	Status Report	2010
Linking Industrial needs and VET to optimise Human Capital	E-Cubed Consultants Ltd - ESF Project 2.85; Phase 1	Report	2011
MCAST Prospectus – Academic year 2015-2016	MCAST	Document	2015
Policy Documents related to Professional Associations and Training Providers			
Business Promotion Act 2001 - "An Act to amend the Industrial Development Act" Act IV of 2001, Chapter 325 of the Laws of Malta	Malta Enterprise	Legal Document	2001
The Business Promotion Act in Brief	Malta Enterprise	Document	2006
The Next Leap – From Labour Market Programmes to Active Labour Market Policy	Union Haddiema Maqghudin	Report	2012
Strength in Unity - A Memorandum to Political Parties	Malta Employers' Association	Document	2012
An Industrial Policy for Malta	Malta Chamber of Commerce, Enterprise and Industry	Policy Document	2013
Economic Vision for Malta 2014-2020	Malta Chamber of Commerce, Enterprise and Industry	Publication	2014
Policy Documents related to Accountancy			
Malta Accountancy Profession Act, 1979, Chapter 281	Laws of Malta	Document	1979
Bridging the Gap: A Report on Skill Gaps in the Financial Services Industry	Malta Financial Services Authority Education Consultative Council	Report	2008
Linking Industrial needs and VET to optimise Human Capital (ESF project 2.85) – Operational Programme II – Cohesion Policy 2007-2013	E-Cubed Consultants on behalf of MCAST, Malta Chamber of Commerce and Industry, MQC, ITS	Study	2011

Strategic Plan 2011-2014	Malta Financial Services Authority	Plan	2011
MIA Membership	Malta Institute of Accountants	Statistics	2014
Department of Accountancy	University of Malta	Statistics	2014
Bridging the Gap: A Report on Skill Gaps in the Financial Services Industry	Malta Financial Services Authority Education Consultative Council	Report	2015
Building on Success: Future Skills Requirements in the Financial Services Sector – Action Plan	Malta Financial Services Authority Education Consultative Council	Report	2015
Deloitte Malta Transparency Report, 2014, 2015	Deloitte	Report	2015
EY Transparency Report, 2015	Ernst and Young, Malta	Report	2015
EY's Malta attractiveness survey 2015	Ernst and Young, Malta	Survey	2015
The KPMG Difference, 2015	KPMG	Report	2015
PWC, 2015 - Review by the Malta Firm	Price Waterhouse Coopers	Report	2015
Accountancy Course Requirements	University of Malta	Regulations	2015
Financial Services Survey	Price Waterhouse Coopers	Report	2016
CPE Programmes	Malta Institute of Accountants	Programme	2016
Preliminary Results of the National Employee Survey	NCFHE	Survey	2016
Policy Documents related to the Pharmachem Industry			
The Restructuring of the Pharmacy Degree Course	The Ministry for Education and The Commission for the Development of Higher Education	Report	1981
Pharmacy and the EU: The Impact of European Union Membership on the Pharmacy Profession in Malta	President, Malta Chamber of Pharmacists	Article	2000
Malta: The hub for world-class Pharmaceutical Companies	KPMG	Document	2011
Future Pharma: Five Strategies to accelerate the Transformation of the Pharmaceutical Industry by 2020	KPMG	Document	2011
Country Report: Malta A healthy location for the Pharmaceutical Industry	Focus Report, 2011	Report	2011
FIP Global Pharmacy Workforce Report	*Federation Internationale Pharmaceutique*	Report	2012
The Pharmaceutical Industry in Figures	European Federation of Pharmaceutical Industries and Associations (EFPIA)	Report	2014
Policy Documents related to Information and Communications Technology			
A National Strategy for Information Technology for Malta (NSIT)	Professor Juanito Camilleri	Document	1994
Information Systems Strategic Plans for the Public Service 1991-1996	MSU, Office of the Prime Minister	Document	1998

Information Systems Strategic Plans for the Public Service 1999-2001	CIMU, Office of the Prime Minister	Document	1999
e-Government Strategy	MITTS Ltd		2000
Information Systems Strategic Plans for the Public Service 2002-2005	MEU, Office of the Prime Minister	Document	2002
Information Technology Practitioner Skills in Europe: Study of the Labour Market position, in particular for Germany, Ireland, Sweden, and the United Kingdom	CEPIS	Document	2002
Information Systems Strategic Plans for the Public Service 2008-2010	MIIT & I	Document	2008
National Information and Communications Strategy 2004-2006	MIIT & I	Document	2004
ICT Malta: Malta – A Centre of Quality for the ICT Industry	Malta Enterprise	Document	2006
National Strategy for Research and Innovation 2007-2010	MCST	Document	2007
The Smart Island Strategy 2008-2010	MITA	Document	2008
Strategic Plan 2009-2012	MITA	Document	2009
National and Government ICT Strategy	MITA	Document	2010
E-Skills and ICT Professionalism: Fostering the ICT Profession in Europe	IVI, CEPIS	Document	2012
E-Skills for the 21st Century	European Commission	Document	2013
MITA Annual Report 2013	MITA	Report	2013
European e-Competence Framework 3.0/ User guide for the application of the European e-Competence Framework	European Committee for Standardisation (CEN)	Document	2014
A Common European Framework for ICT Professionals in all industry sectors	European Committee for Standardisation (CEN)	Document	2014
E-Skills: Promotion of ICT Professionalism in Europe, Malta, 2014	European Commission		2014
Digital Malta National Digital Strategy 2014-2020	Malta Information Technology Agency	Publication	2014
The EU explained: Digital Agenda for Europe	European Commission	Publication	2014
E-Skills: The International Dimension and the Impact of Globalisation – Final Report, 2014	Empirica, Innovation Value Institute (IVI), Council of European Professional Informatics Societies (CEPIS), IDC		2014

Source: author's analysis, compilation and design, 2016

Appendix 5: Questions to Government Representatives at Policy Making Level

What are the skills gaps in the labour market? A skills gap is the difference in the skills required on the job and the actual skills possessed by the employees. A skill gap arises when HEIs struggle to keep pace with economic growth, causing market failures.

TOPIC 1: INSTITUTIONAL ACTORS' ROLES AND RESPONSIBILITIES

1. In the 1970s and 1980s, the state exercised a considerable control over the courses of the University of Malta which was a policy concern. Does a form of Government control still exist today?
2. Is Government involved/exercise control in the direction taken by HEIs?
3. Does Government demonstrate undue influence on what HEIs do? (Russell Group; Boden 2010).
4. Would you say that quality audits, research assessment exercises, budgets, performance indicators and special initiatives are forms of Government control over the University's strategy and direction?
5. Are HEIs fulfilling Government's goal of employability of graduates?

TOPIC 2: SKILLS GAPS IN THE LABOUR MARKET

1. To what extent are you concerned about skills gaps of graduates in the labour market?
2. Is there agreement amongst the Institutional actors about the existence of these gaps?
3. What are the skills gaps? Describe them briefly.
4. Where do these gaps emanate from? What are the factors affecting the skills gaps?
5. How would you address these gaps?
6. Who are the main institutional actors that play a role in addressing these gaps? Are they the most appropriate? What is their role or contribution?
7. How do you seek to influence these institutional actors in addressing the 'perceived' gap?
8. How has EU membership impacted on employability skills?
9. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?

Appendix 6: Questions to Higher Education Institutions Representatives at Policy Making Level

What are the skills gaps in the labour market? A skills gap is the difference in the skills required on the job and the actual skills possessed by the employees. A skill gap arises when HEIs struggle to keep pace with economic growth, causing market failures.

TOPIC I: INSTITUTIONAL ACTORS' ROLES AND RESPONSIBILITIES

1. What is the main vision of the University to direct the students in preparation for the labour market?
2. Is the University's aim/s to teach students to critically think and/or produce academic skills for work on the job?
3. Is the role of HEIs to prepare the workforce of the future or is it to provide an educational stimulus? Is it to teach disciplines for economic and utilitarian means?
4. Would you say that HEIs are slow to adapt to changing requirements because of the rapid competitive economies?
5. What are the effects of the Bologna and Copenhagen models on HEIs?
6. Does the notion of employability and the centralised control and regulation of Government have implications on the 'nature of HEIs, pedagogical practices and their curricula' (Boden and Nedeva, 2010)?
7. Would you say that the massification of students is causing 'academic restrictions' (Jackson, 1999) reflecting 'a narrow view of educational aims and a threat to academic freedom' (Yorke, 2006)?
8. HEIs are state funded. How do they demonstrate that they are performing well? Is it due to learning outcomes which are measurable indicators?
9. Is the University focused on expansion as opposed to performance? Could this lead to outdated methods and policies?
10. Is education reduced 'to a set of technical skills and factual knowledge' as opposed to the development of the mind' (HEFCE, 2011, p.415)?
11. Is it being assumed that the curricular process in HEIs guarantees the development of pre-requisites for employment?
12. Do you think that graduates read for a University qualification as the sole purpose to obtain earnings or an 'educational voyage of discovery'?

TOPIC 2: SKILLS GAPS IN THE LABOUR MARKET

1. To what extent are you concerned about skills gaps of graduates in the labour market?
2. Is there agreement amongst the Institutional actors about the existence of these gaps?
3. What are the skills gaps? Describe them briefly.
4. Where do these gaps emanate from? What are the factors affecting the skills gaps?
5. How would you address these gaps?
6. Who are the main institutional actors that play a role in addressing these gaps? Are they the most appropriate? What is their role or contribution?
7. How do you seek to influence these institutional actors in addressing the 'perceived' gap?
8. How has EU membership impacted on employability skills?
9. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?

Appendix 7: Questions to Professional Associations and Training Providers at Policy Making Level

(Unions; Associations; Training providers; Institutes, Chamber of Commerce)

What are the skills gaps in the labour market? A skills gap is the difference in the skills required on the job and the actual skills possessed by the employees. A skill gap arises when HEIs struggle to keep pace with economic growth, causing market failures.

TOPIC 1: INSTITUTIONAL ACTORS' ROLES AND RESPONSIBILITIES

1. What are the roles and responsibilities of professional associations in terms of graduate employability skills?
2. Do the unions 'push' companies to train staff members?

TOPIC 2: SKILLS GAPS IN THE LABOUR MARKET

1. To what extent are you concerned about skills gaps of graduates in the labour market?
2. Is there agreement amongst the Institutional actors about the existence of these gaps?
3. What are the skills gaps? Describe them briefly.
4. Where do these gaps emanate from? What are the factors affecting the skills gaps?
5. How would you address these gaps?
6. Who are the main institutional actors that play a role in addressing these gaps? Are they the most appropriate? What is their role or contribution?
7. How do you seek to influence these institutional actors in addressing the 'perceived' gap?
8. How has EU membership impacted on employability skills?
9. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?

Appendix 8: Questions to Private Employers at Policy Making Level

What are the skills gaps in the labour market? A skills gap is the difference in the skills required on the job and the actual skills possessed by the employees. A skill gap arises when HEIs struggle to keep pace with economic growth, causing market failures.

TOPIC 1: INSTITUTIONAL ACTORS' ROLES AND RESPONSIBILITIES

1. Does training take place in your organisation?
2. Are employers involved in the curricula design of the required courses?
3. Do employers identify the skill sets needed by graduates and inform the HEIs?
4. Jobs are being accepted by graduates which are not commensurate with their qualifications and skills. Would you agree to this statement?

TOPIC 2: SKILLS GAPS IN THE LABOUR MARKET

1. To what extent are you concerned about skills gaps of graduates in the labour market?
2. Is there agreement amongst the Institutional actors about the existence of these gaps?
3. What are the skills gaps? Describe them briefly.
4. Where do these gaps emanate from? What are the factors affecting the skills gaps?
5. How would you address these gaps?
6. Who are the main institutional actors that play a role in addressing these gaps? Are they the most appropriate? What is their role or contribution?
7. How do you seek to influence these institutional actors in addressing the 'perceived' gap?
8. How has EU membership impacted on employability skills?
9. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?

Appendix 9: Questions to Government Representatives at Executive and Supervisory Level

TOPIC 1: INSTITUTIONAL ACTORS' GENERAL VIEWS AND SYNERGY ON THE ECONOMY, SKILLS AND EMPLOYMENT OF GRADUATES

1. What do you understand by the concept 'employability'?
2. New industries that set up in Malta demand that high skilled human resources are flexible and adaptable. Is the relevance of education and acquired employability skills, rather than certificates crucial factors in being employed?
3. Is there a shortage of graduates with critical skills? If yes, which are these skills?
4. Employers have this expectation that graduates are ready for the job and not prepared for employment (Boden, 2010). Would you agree? If yes or no, why?
5. How do you relate with other Institutional actors to try and address employability skills of graduates?
6. How do you view Higher Education Institutions addressing this issue?

TOPIC 2: EMPLOYABILITY DISCOURSES

1. Would you say that educational policy ensures that academic and vocational knowledge are developed and accredited?
2. Is the massification of students lowering the value of credentials in the competition for jobs within congested labour markets (Brown et al., 2001)?
3. Does student massification imply equal access to higher educational opportunities? Do HEIs need to restructure? If so, would HEIs roles be put into question?
4. Does the design and content of the curriculum guarantee the development of prerequisites for employment or facilitate it?
5. What makes students employable?
6. What systems are in place, given the volume and diversity of the students to ensure they are employable?
7. The Government is exerting pressure on HEIs to offer courses aligned to the job market. How far is this true?

TOPIC 3: SYNERGY BETWEEN ACTORS - What are the modes of collaboration and barriers that exist?

1. Is there synergy between HEIs, Government, Employers and Professional Associations on the need to have skilled graduates? How?
2. What is Government's perception of other institutional actors on graduates' employability skills?
3. Which are the most relevant modes of cooperation between Government and HEIs in enhancing graduate employability skills?
4. Has the Government shifted authority of graduate employability to the HEIs without 'undue influence on what HEIs do'? (Russell Group, 2010; Boden, 2010).

TOPIC 4: THE LABOUR MARKET AND EMPLOYMENT

Labour market

1. Do skilled employees contribute to an increase in the economic performance of the country? How?
2. Would you say that over-investment in education would solve all the labour market problems?
3. What are the main challenges of the future labour market?

Employment

1. Employability is sometimes confused with getting a job and doing a job. Graduate employment suggests the existence of high levels of employability (getting a job). Do you agree?
2. Which policies exist that enhance its graduates to employment? Which interventions work?
3. What are the criteria for graduates gaining employment?
4. Is government doing enough to make cross-border employment possible for graduates?
5. Would the reputation of the educational institution count?
6. Would the graduate's ethnic background, disabilities and IT competency count?
7. Would you say that students are financially motivated to attend HEIs and view it as a pathway to 'better' employment?

TOPIC 5: SKILLS REGIME

1. How is Government shaping the country's educational training?
2. Has the government prioritised the selection of subject areas so as to address the needs of the country?
3. How has EU funding been utilised for educational purposes?
4. There are a number of training systems that exist to enhance graduate skills. What new systems are you looking at?
5. Does Government ensure academic and vocational knowledge in students are developed and accredited and pays little attention to soft or key transferable skills?
6. What educational reforms have taken place to improve employability skills needed for the labour market?

TOPIC 6: SKILLS GAPS

1. To what extent is are you concerned about skills gaps of graduates in the labour market?
2. What are the skills gaps? Describe them briefly.
3. Where do these gaps emanate from? What are the factors affecting the skills gaps?
4. How would you address these gaps?
5. Who are the main institutional actors that play a role in addressing these gaps? Are they the most appropriate? What is their role or contribution?
6. How do you seek to influence these actors in addressing the 'perceived' gaps?
7. Is there agreement across these institutional actors about the existence of these gaps?
8. How has EU funding been utilised to address graduate skills gaps in the labour market?
9. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?

Appendix 10: Questions to Higher Education Institutions Representatives at Executive and Supervisory Levels

TOPIC 1: INSTITUTIONAL ACTORS' GENERAL VIEWS AND SYNERGY ON THE ECONOMY, SKILLS AND EMPLOYMENT OF GRADUATES

1. What do you understand by the concept 'employability'?
2. New industries that set up in Malta demand that high skilled human resources are flexible and adaptable. Is the relevance of education and acquired employability skills, rather than certificates crucial factors in being employed?
3. To what extent is there a shortage of graduates with critical skills? If yes, what are they?
4. Employers have this expectation that graduates are ready for the job and not prepared for employment (Boden et al., 2010, p.20). Would you agree? If yes or no, why?
5. How do you relate with other institutional actors to try and address employability skills of graduates?

TOPIC 2: EMPLOYABILITY DISCOURSES

1. How do HEIs 'respond' to labour market requirements or are they proactive actors of innovation and new configuration of skills?
2. How does the University understand its fundamental aim? Are there supplementary aims?
3. Is there a measure of control or pressure being exerted over HEIs? What form of control does this take?
4. What are the implications on the 'nature of universities' pedagogical practices and their curricula? (Boden et al., 2010, p.20).
5. Should the HEIs focus primarily on improvements to learning and teaching in order to improve the early career success of graduates or should they focus on promoting their programmes and better protect vulnerable and socially important segments of the labour market?
6. Does the Bologna process lead to greater standardisation and international comparability of qualifications? If yes, is this desirable for the employment sector?
7. Is a bachelor degree programme a sufficient qualification for the labour market? Do we need more Bachelor or more masters in Pharmaceutical/ICT/Accountancy? Why?
8. Does the design and content of the curriculum guarantee the development of prerequisites for employment or facilitates it?
9. What must students acquire to make them employable?
10. What systems (if at all) are in place, given the volume and diversity of the students to ensure they are employable?

TOPIC 3: SYNERGY AMONG INSTITUTIONAL ACTORS

1. Is there synergy between HEIs, Government, Employers and Professional Associations on the need to have skilled graduates? How?
2. Would you agree with the statement that the Government has shifted authority of graduate employability to the HEIs without 'undue influence on what Universities do'? (Russell Group 2010; Boden, 2010).
3. Which are the most relevant modes of cooperation between the University and employers? E.g. curriculum design and study programmes, training and recruitment of graduates.
4. How do HEIs adapt and respond to employers' demands, for skilled graduates?
5. Are HEIs being encouraged by Employers' Associations to develop graduate employability skills for the labour market?
6. Which are the key developmental barriers to cooperation from the University and employers' point of view?

TOPIC 4: THE LABOUR MARKET AND EMPLOYMENT

Labour market

1. Do skilled employees contribute to an increase in the economic performance of the country? How?
2. Would you say that over-investment in education would solve all the labour market problems?
3. What do you see as the main challenges of the future labour market?

Employment

1. Employability is sometimes confused with getting a job and doing a job. Graduate employment suggests the existence of high levels of employability (getting a job). Do you agree?
2. Would you say that students enter University because they are financially motivated and view it as a pathway to 'better' employment?
3. Since employers do not pay for graduates' education, they may recruit them at a cheaper price due to oversupply. Do you think this happening?
4. In effect, the credentials in the competition for labour market jobs would be less valued due to an increase in student enrolment. Do you agree?
5. On the other hand, more specialised graduates tend to get better jobs with higher earnings. (Boden et al., 2010, p.20). Is this true?
6. Do you think HEIs are doing enough to make cross-border employment possible for graduates?

TOPIC 5: SKILLS REGIME

1. What do the HEIs understand generic graduate skills to be? How can HEIs best enable students to develop their employability skills?
2. Would you say that education has been reduced to a set of technical skills and factual knowledge or the development of the mind? (HEFCE, 2011, p.415).
3. Can it be stated that students are employable on the basis of curricular provision alone (Yorke, 2006)?
4. Would you say that skills are embedded 'in the curriculum' (Moreau et al., 2006)?
5. Would you say that getting a degree means immediate direct earnings? What other factors need to be considered?
6. What educational reforms have taken place to improve employability skills needed for the labour market?
7. Occupational skills need to be updated throughout employment because jobs are no longer for life. How does the educational system respond to this?

TOPIC 6: SKILLS GAPS

1. Are HEIs providing knowledgeable and skilled graduates to match labour requirements? In other words, are there skills gaps?
2. To what extent is are you concerned about skills gaps of graduates in the labour market?
3. What are the skills gaps? Describe them briefly.
4. Where do these gaps emanate from? What are the factors affecting the skills gaps?
5. How would you address these gaps?
6. Who are the main institutional actors that play a role in addressing these gaps? Are they the most appropriate? What is their role or contribution?
7. How do you seek to influence these actors in addressing the 'perceived' gap?
8. Is there agreement across these institutional actors about the existence of these gaps?
9. How has EU funding been utilised to address graduate skills gaps in the labour market?
10. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?

Appendix 11: Questions to Professional Associations and Training Providers at Executive and Supervisory Levels

(Unions; Associations; Training providers; Institutes, Chamber of Commerce)

TOPIC 1: INSTITUTIONAL ACTORS' GENERAL VIEWS AND SYNERGY ON THE ECONOMY, SKILLS AND EMPLOYMENT OF GRADUATES

1. What do you understand by the concept 'employability'?
2. New industries that set up in Malta demand that high skilled human resources are flexible and adaptable. Is the relevance of education and acquired employability skills, rather than certificates crucial factors in being employed?
3. Is there a shortage of graduates with critical skills? If yes, which are these skills?
4. Employers have this expectation that graduates are ready for the job and not prepared for employment (Boden, 2010). Would you agree? If yes or no, why?
5. How do you relate with other Institutional actors to try and address employability skills of graduates?
6. How do you view Higher Education Institutions addressing this issue?

TOPIC 2: EMPLOYABILITY DISCOURSES

1. How do professional Associations 'respond' to labour market requirements or are they proactive actors of innovation and new configuration of skills?
2. What systems are in place, given the volume and diversity of students, to ensure they are employable?
3. Is the University's aim/s to teach students to critically think and produce academic skills for work on the job?
4. Do we need more Pharmaceutical/ICT/Accountancy graduates who are subject specialists (which?) or more who possess broader cross-disciplinary knowledge and skills (which)?

TOPIC 3: SYNERGY AMONG INSTITUTIONAL ACTORS

1. Is there synergy between HEIs, Government, Employers and Professional Associations on the need to have skilled graduates? How?
2. What is your perception as a Professional Association of other institutional actors on graduates' employability skills?
3. What are your sources of information on graduates' skills?
4. How is information (interpreting) disseminated (responding) to your members?

TOPIC 4: THE LABOUR MARKET AND EMPLOYMENT

The Labour Market

1. Do skilled employees contribute to an increase in the economic performance of the country? How?
2. Would you say that over-investment in education would solve all the labour market problems?
3. What are the main challenges of the future labour market?

Employment

1. Employability is sometimes confused with getting a job and doing a job. Graduate employment suggests the existence of high levels of employability (getting a job). Do you agree?
2. Would you say that students enter University because they are financially motivated and view it as a pathway to 'better' employment?
3. Since employers do not pay for graduates' education, they may recruit them at a cheaper price due to oversupply. Do you think this is happening?

4. Would employers prefer to employ: a graduate who studied overseas; a graduate from the HEIs in Malta or a graduate from educational providers representing a foreign university? What would be the reasons for their choice do you think?
5. Do you think Government and HEIs are doing enough to make cross-border employment possible for graduates?

TOPIC 5: SKILLS REGIME

1. What are the employability skills that graduates should have for the labour market?
2. Would you say that work skills* help individuals to adapt to a world that is constantly changing?
3. Do you know what to expect from an undergraduate degree?
4. We have often heard complaints and concerns expressed by employers about deficiencies in skills in their new graduates. What are these skills deficiencies they are complaining about?
5. Graduate skills need to be continually updated due to the changing requirements in the labour market. Do you encourage organisations to update their graduates' skills? Do you contribute to this?
6. What is your current mode of provision?

TOPIC 6: SKILLS GAPS

1. Are you concerned about skills gaps of graduates in the labour market?
2. What are the skills gaps? Describe them briefly.
3. Where do these gaps emanate from? What are the factors affecting the skills gaps?
4. How would you address these gaps?
5. Who are the main institutional actors that play a role in addressing these gaps? Are they the most appropriate? What is their role or contribution?
6. How do you seek to influence these actors in addressing the 'perceived' gaps?
7. Is there agreement across these institutional actors about the existence of these gaps?
8. How has EU funding been utilised to address graduate skills gaps in the labour market?
9. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?
10. In the last ten years, Government has introduced creative pathways to address some skills gaps through MCAST. Are these courses addressing labour market requirements in Pharmacy/ICT/Accountancy in the short-term?

Appendix 12: Questions to private Employers at Executive and Supervisory Levels

TOPIC 1: INSTITUTIONAL ACTORS' GENERAL VIEWS AND SYNERGY ON THE ECONOMY, SKILLS AND EMPLOYMENT OF GRADUATES

1. What do you understand by the concept 'employability'?
2. New industries that set up in Malta demand that high skilled human resources are flexible and adaptable. Is the relevance of education and acquired employability skills, rather than certificates crucial factors in being employed?
3. I there a shortage of graduates with critical skills? If yes, what are they?
4. Employers have this expectation that graduates are ready for the job and not prepared for employment (Boden, 2010). Would you agree? If yes or no, why?
5. How do you relate with other Institutional actors to try and address employability skills of graduates?
6. What are your views on Higher Education Institutions to address this issue?

TOPIC 2: EMPLOYABILITY DISCOURSES

1. How do employers 'respond' to labour market requirements or are they proactive actors of innovation and new configuration of skills?
2. Would you say that work skills help individuals to adapt to a world that is constantly changing?
3. Is the University's aim/s to teach students to critically think and produce academic skills for work on the job?
4. Do we need more Pharmaceutical/ ICT/Accountancy graduates who are subject specialists (which?) or more who possess broader cross-disciplinary knowledge and skills (which)?

TOPIC 3: SYNERGY WITH INSTITUTIONAL ACTORS

1. Is there synergy between HEIs, Government, Employers and Professional Associations on the need to have skilled graduates? How?
2. What is your perception as an employer of other institutional actors on graduates' employability skills?
3. To what extent does collaboration take place between the HEIs and the business sector?
4. Which are the key developmental barriers to cooperation from the University and employers' point of view?
5. How have employers established systems for informing HEIs and graduates about what to expect from HE graduates?

TOPIC 4: THE LABOUR MARKET AND EMPLOYMENT

The Labour Market

1. Do skilled employees contribute to an increase in the economic performance of the country? How?
2. Would you say that over-investment in education would solve all the labour market problems?
3. What are the main challenges of the future labour market?
4. Due to changes in technology, financial markets and product globalisation, the labour market has not responded fast and has introduced systems such as part-time work and flexible hours. Have these systems been introduced in your organisation?
5. In effect, the credentials in the competition for labour market jobs would be less valued due to an increase in student enrolment. Do you agree?
6. On the other hand, more specialised graduates tend to get better jobs with higher earnings. (Boden, 2010). Is this true?

Employment

1. Employability is sometimes confused with getting a job and doing a job. Graduate employment suggests the existence of high levels of employability (getting a job). Do you agree?
2. Would particular employment positions first ensure that the graduate has the relevant qualifications in an academic discipline as a pre-requisite for the job?
3. Would you say that when employing graduates, the selection does not only depend on whether specific job requirements can be met but also the relativity to other job seekers and the number of jobs available?
4. Have you ever come across the fact that graduates may be employable but not employed due to the lack of positions?
5. Do you, as an employer, recruit a University graduate for any given post at a cheaper price due to oversupply, since the HEIs do not present a cost to the employers?
6. Would you prefer to employ: a graduate who studied overseas; a graduate from the HEIs in Malta or a graduate from educational providers representing a foreign university? What are the reasons for your choice?
7. Do nationality, family background, course duration and disabilities condition your assessment of the graduate?
8. Do you think Government, HEIs and yourselves are doing enough to make cross-border employment possible for graduates?

TOPIC 5: SKILLS REGIME

1. Do you know what to expect from an undergraduate degree?
2. We have often heard complaints and concerns expressed by employers about deficiencies in skills in their new graduates. What are these skills deficiencies?
3. In some academic disciplines, high education awards and IT accreditation by major companies are important for competition in the labour market. Is this true for your organisation?
4. Which actions do you think HEIs should take to improve the employability of graduates?
5. Skills need to be continually updated due to the changing requirements in the labour market. Do organisations update their graduates' skills? What is your current mode of provision?

TOPIC 6: SKILLS GAPS

1. Are you concerned about skills gaps of graduates in the labour market?
2. What are the skills gaps? Describe them briefly.
3. Where do these gaps emanate from? What are the factors affecting the skills gaps?
4. How would you address these gaps?
5. Who are the main institutional actors that play a role in addressing these gaps? Are they the most appropriate? What is their role or contribution?
6. How do you seek to influence these actors in addressing the 'perceived' gaps?
7. Is there agreement across these institutional actors about the existence of these gaps?
8. How has EU funding been utilised to address graduate skills gaps in the labour market?
9. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?
10 Has tertiary education improved graduates' chances of finding a job (or is there a perceived gap)?
11 In the last ten years, Government has introduced creative pathways to address some skills gaps through MCAST. Are these courses addressing your requirements in Pharmacy/ICT/Accountancy in the short-term?

Appendix 13: Questions to Government Representatives at the level of Experts and Implementers

TOPIC 1: INSTITUTIONAL ACTORS' GENERAL VIEWS AND SYNERGY ON THE ECONOMY, SKILLS AND EMPLOYMENT OF GRADUATES

1. What do you understand by the concept 'employability'?
2. New industries that set up in Malta demand that high skilled human resources are flexible and adaptable. Is the relevance of education and acquired employability skills, rather than certificates crucial factors in being employed?
3. To what extent is there a shortage of graduates with critical skills? If yes, which are these skills?
4. Employers have this expectation that graduates are ready for the job and not prepared for employment (Boden, 2010). Would you agree? If yes or no, why?
5. How do you relate with other Institutional actors to try and address employability skills of graduates?
6. How do you view Higher Education Institutions addressing this issue?

TOPIC 2: EMPLOYABILITY DISCOURSES

1. What are the Pharmaceutical/ICT/Accountancy skills policies that contribute to developing a skilled workforce in a changing labour market?
2. Is the massification of Pharmacy/ICT/Accountancy students lowering the value of credentials in the competition for pharmacy/ICT/Accountancy jobs?
3. Does the design and content of the Pharmacy/ICT/Accountancy curriculum guarantee the development of prerequisites for employment or facilitate it?
4. What makes Pharmacy/ICT/Accountancy students employable?
5. What systems are in place, given the volume and diversity of the students to ensure they are employable?
6. The Government is exerting pressure on the Pharmacy/ICT/Accountancy Departments to offer courses aligned to the job market. How far is this true?
7. What the reasons why the stipend for science subjects is higher than that of other disciplines? Is Government providing more maintenance grants or addressing different requirements?

TOPIC 3: SYNERGY AMONG INSTITUIONAL ACTORS

1. Is there synergy between the Pharmacy/ICT/Accountancy Departments and Government, Employers and Professional Associations on the need to have skilled graduates? How?
2. Which are the most relevant modes of cooperation between Government and the Pharmacy/ICT/Accountancy Departments in enhancing graduate employability skills?
3. Has the Government shifted authority of graduate employability to the pharmacy/ICT/Accountancy Departments without 'undue influence on what you do'? (Russell Group, 2010; Boden, 2010).

TOPIC 4: THE LABOUR MARKET AND EMPLOYMENT

The Labour Market

1. Would you say that over-investment in education would solve all the labour market problems?
2. What are the main challenges of the future labour market in Pharmacy/ICT/Accountancy?

Employment

1. Employability is sometimes confused with getting a job and doing a job. Graduate employment suggests the existence of high levels of employability (getting a job). Do you agree?
2. Which policies exist that enhance its graduates to employment? Which interventions work?
3. What are the criteria for Pharmacy/ICT/Accountancy graduates gaining employment?
4. Is government doing enough to make cross-border employment possible for Pharmacy/ICT/Accountancy graduates?
5. Would you say that students are financially motivated to attend HEIs and view it as a pathway to 'better' employment?

TOPIC 5: SKILLS REGIME

1. How is Government shaping the country's educational training?
2. How has EU funding been utilised for Pharmacy/ICT/Accountancy purposes?
4. There are a number of training systems that exist to enhance Pharmacy/ICT/Accountancy graduate skills. What new systems are you looking at?
5. Does Government ensure academic and vocational knowledge in students are developed and accredited and pays little attention to soft or key transferable skills?
6. What educational reforms have taken place to improve employability skills Pharmacy/ICT/Accountancy needed for the labour market?

TOPIC 6: SKILLS GAPS

1. To what extent are you concerned about skills gaps of graduates in the labour market?
2. What are the skills gaps of Pharmacy/ICT/Accountancy graduates? Describe them briefly. How would you address these gaps?
3. What are the factors affecting the skills gaps in Pharmacy/ICT/Accountancy?
4. Who are the main institutional actors that play a role in addressing these gaps? What is their role or contribution?
5. How do you seek to influence these actors in addressing the 'perceived' gaps?
6. How has EU funding been utilised to address graduate skills gaps in the labour market?
7. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?

Appendix 14: Questions to Higher Education Institutions Representatives at level of Experts and Implementers

TOPIC 1: INSTITUTIONAL ACTORS' GENERAL VIEWS AND SYNERGY ON THE ECONOMY, SKILLS AND EMPLOYMENT OF GRADUATES

1. What do you understand by the concept 'employability'?
2. New industries that set up in Malta demand that high skilled human resources are flexible and adaptable. Is the relevance of education and acquired employability skills, rather than certificates crucial factors in being employed?
3. To what extent is there a shortage of Pharmacy/ICT/Accountancy graduates with critical skills? If yes, which are these skills?
4. Employers have this expectation that graduates are ready for the job and not prepared for employment (Boden, 2010). Would you agree? If yes or no, why?
5. How do you relate with other institutional actors to try and address employability skills of Pharmacy/ICT/Accountancy graduates?

TOPIC 2: EMPLOYABILITY DISCOURSES

1. How do Pharmacy/ICT/Accountancy 'respond' to labour market requirements or are they proactive actors of innovation and new configuration of skills?
2. How does the University understand its fundamental aim? Are there supplementary aims?
3. Is there a measure of control or pressure being exerted over the Pharmacy/ICT/Accountancy Departments? What form of control does this take?
4. What are the implications on the 'nature of universities' pedagogical practices and their curricula? (Boden et al., 2010, p.20).
5. Should the Pharmacy/ICT/Accountancy Departments focus primarily on improvements to learning and teaching in order to improve the early career success of graduates or should the Departments focus on promoting their programmes and better protect vulnerable and socially important segments of the labour market?
6. Do you think a bachelor degree programme is a sufficient qualification for the labour market? Do we need more Bachelor or more masters in Pharmaceutical/ICT/Accountancy labour markets?? Why?
7. Does the design and content of the Pharmacy/ICT/Accountancy curricula guarantee the development of prerequisites for employment or do they facilitate it?
8. What makes Pharmacy/ICT/Accountancy students employable?
9. What systems (if at all) are in place, given the volume and diversity of the Pharmacy/ICT/Accountancy students to ensure they are employable?

TOPIC 3: SYNERGY AMONG INSTITUTIONAL ACTORS

1. Is there synergy between your Departments and Government, Employers and Professional Associations on the need to have skilled Pharmacy/ICT/Accountancy graduates? How?
2. Which are the most relevant modes of cooperation between the Pharmacy/ICT/Accountancy Departments and employers? E.g. curriculum design and study programmes, training and recruitment of graduates.
3. How do the Pharmacy/ICT/Accountancy Departments adapt and respond to employers' demands, for skilled graduates?
4. Which are the key developmental barriers to cooperation from the Pharmacy/ICT/Accountancy Departments and employers' point of view?

TOPIC 4: THE LABOUR MARKET AND EMPLOYMENT

The Labour Market

1. Would you say that over-investment in education would solve all the labour market problems?
2. What do you see as the main challenges of the future labour market in Pharmacy/ICT/Accountancy?

Employment

1. Employability is sometimes confused with getting a job and doing a job. Graduate employment suggests the existence of high levels of employability (getting a job). Do you agree?
2. Since employers do not pay for Pharmacy/ICT/Accountancy graduates' education, they may recruit them at a cheaper price due to oversupply. Do you think this happening?

TOPIC 5: SKILLS REGIME

1. What do the Pharmacy/ICT/Accountancy Departments understand generic graduate skills to be? How can the Pharmacy/ICT/Accountancy Departments best enable students to develop their employability skills?
2. Would you say that education has been reduced to a set of technical skills and factual knowledge or the development of the mind? (HEFCE, 2011, p.415).
3. Can it be stated that Pharmacy/ICT/Accountancy students are employable on the basis of curricular provision alone (Yorke, 2006)? Would you say that skills are embedded *'in the curriculum'* (Moreau et al., 2006)?
4. Would getting a Pharmacy/ICT/Accountancy degree mean immediate direct earnings? What other factors need to be considered?
5. What educational reforms have taken place to improve employability skills in Pharmacy/ICT/Accountancy needed for the labour market?
6. Occupational skills need to be updated throughout employment because jobs are no longer for life. How does the educational system respond to this?

TOPIC 6: SKILLS GAPS

1. To what extent are you concerned about skills gaps of graduates in the labour market?
2. Are the Pharmacy/ICT/Accountancy Departments providing knowledgeable and skilled graduates to match labour requirements? In other words, are there skills gaps?
3. What are the skills gaps in Pharmacy/ICT/Accountancy? Describe them briefly.
4. What are the factors affecting the skills gaps and how would you address them?
5. How does your Department seek to influence these Institutional actors in addressing the 'perceived' gap?
6. How has EU funding been utilised to address Pharmacy/ICT/Accountancy graduate skills gaps in the labour market?
7. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?

Appendix 15: Questions to Professional Associations and Training Providers at the level of Experts and Implementers

(Unions; Associations; Training providers; Institutes, Chamber of Commerce)

TOPIC 1: INSTITUTIONAL ACTORS' GENERAL VIEWS AND SYNERGY ON THE ECONOMY, SKILLS AND EMPLOYMENT OF GRADUATES

1. What do you understand by the concept 'employability'?
2. How important are each of the following factors for employers in recruiting more or fewer graduates? Rate in order of importance (1 the most important)

    - Actual growth of business
    - Anticipated growth of business
    - Increasing complexity of tasks
    - High turnover of staff
    - Higher number of applicants
3. New industries that set up in Malta demand that high skilled human resources are flexible and adaptable. Is the relevance of education and acquired employability skills, rather than certificates crucial factors in being employed?
4. To what extent is there a shortage of Pharmacy/ICT/Accountancy graduates with critical skills? If yes, what are they?
5. Employers have this expectation that graduates are ready for the job and not prepared for employment (Boden et al., 2010, p.20). Would you agree? If yes or no, why?
6. How do you relate with other Institutional actors to try and address employability skills of graduates in Pharmacy/ICT/Accountancy?
7. What are your views on Higher Education Institutions to address this issue?

TOPIC 2: EMPLOYABILITY DISCOURSES

1. How do professional Associations 'respond' to labour market requirements or are they proactive actors of innovation and new configuration of skills?
2. What systems are in place, given the volume and diversity of students, to ensure they are employable?
3. Is the University's aim/s to teach students to critically think and produce academic skills for work on the job?
4. Which action should HEIs take in order to improve employability of their graduates? Please rate (1 is the most important).

- Make course more relevant to the needs of employers
- Include practical experience in courses
- Include sector specific work placements as a n integral part of the study programme
- Facilitate relations between graduates and companies

6. Do we need more Pharmaceutical/ICT/Accountancy graduates who are subject specialists (which?) or more who possess broader cross-disciplinary knowledge and skills (which)?

TOPIC 3: SYNERGY AMONG INSTITUTIONAL ACTORS

1. Is there synergy between HEIs, Government, Employers and Professional Associations on the need to have skilled graduates? How?
2. What is your perception as a Professional Association of other institutional actors on graduates' employability skills in Pharmacy/ICT/Accountancy??
3. What are your sources of information on graduates' skills?
4. How is information (interpreting) disseminated (responding) to your members?
5. What could you, HEIs, the Government and the EU do to minimise or prevent skill deficits and shortages in Pharmacy, ICT and Accountancy?

TOPIC 4: THE LABOUR MARKET AND EMPLOYMENT

The Labour Market

1. Do skilled employees contribute to an increase in the economic performance of the country? How?
2. Would you say that over-investment in education would solve all the labour market problems?
3. What are the main challenges of the future labour market?

Employment

1. Employability is sometimes confused with getting a job and doing a job. Graduate employment suggests the existence of high levels of employability (getting a job). Do you agree?
2. Would you say that students enter University because they are financially motivated and view it as a pathway to 'better' employment?
3. Since employers do not pay for graduates' education, they may recruit them at a cheaper price due to oversupply. Do you think this is happening?
4. Would employers prefer to employ: a graduate who studied overseas; a graduate from the HEIs in Malta or a graduate from educational providers representing a foreign university? What would be the reasons for their choice do you think?
5. Do you think Government and HEIs are doing enough to make cross-border employment possible for graduates?

TOPIC 5: SKILLS REGIME

1. What are the employability skills that graduates should have for the labour market?
2. Would you say that work skills* help individuals to adapt to a world that is constantly changing?
3. Do you know what to expect from an undergraduate degree?
4. We have often heard complaints and concerns expressed by employers about deficiencies in skills in their new graduates. What are these skills deficiencies they are complaining about?
5. Graduate skills need to be continually updated due to the changing requirements in the labour market. Do you encourage organisations to update their graduates' skills? Do you contribute to this?
6. What is your current mode of provision?

TOPIC 6: SKILLS GAPS

1. To what extent are you concerned about skills gaps of graduates in the labour market?
2. What are the skills gaps? Describe them briefly.
3. Where do these gaps emanate from? What are the factors affecting the skills gaps?
4. How would you address these gaps?
5. Who are the main institutional actors that play a role in addressing these gaps? Are they the most appropriate? What is their role or contribution?
6. How do you seek to influence these actors in addressing the 'perceived' gaps?
7. Is there agreement across these institutional actors about the existence of these gaps?
8. How has EU funding been utilised to address graduate skills gaps in the labour market?
9. What are the prospects for the future? Do you envisage 'skills gaps' a significant issue in the future or if adequately addressed, can be contained?
10. In the last ten years, Government has introduced creative pathways to address some skills gaps through MCAST. Are these courses addressing labour market requirements in Pharmacy/ICT/Accountancy in the short-term?

Appendix 16: Questions to Private Employers at the level of Experts and Implementers

TOPIC 1: INSTITUTIONAL ACTORS' GENERAL VIEWS AND SYNERGY ON THE ECONOMY, SKILLS AND EMPLOYMENT OF GRADUATES

1. What do you understand by the concept 'employability'?
2. How important are each of the following factors in recruiting more or fewer graduates? Rate in order of importance (1 the most important)

- Actual growth of business
- Anticipated growth of business
- Increasing complexity of tasks
- High turnover of staff
- Higher number of applicants

3. To what extent is there a shortage of graduates with critical skills? If yes, what are these skills?
4. Employers have this expectation that graduates are ready for the job and not prepared for employment (Boden, et al., 2010, p.20). Would you agree? If yes or no, why?
5. How do you relate with other Institutional actors to try and address employability skills of graduates?
6. What are your views on Higher Education Institutions to address this issue?

TOPIC 2: EMPLOYABILITY DISCOURSES

1. Do you, as employers 'respond' to labour market requirements or are you proactive in innovation and new configuration of skills?
2. Would you say that work skills help individuals to adapt to a world that is constantly changing? If yes, please rate (1 is the most important).

- computer literacy
- positive attitude
- independence and initiative
- understanding the big picture
- attendance and self-presentation
- reasoning
- leadership and teamwork
- problem-solving and decision-making
- work ethic
- communication and academic skills
- industry-wide technical skills

3. Is the University's aim/s to teach students to critically think and produce academic skills for work on the job?
4. Which action should HEIs take in order to improve employability of their graduates? Please rate (1 is the most important).

- Make course more relevant to the needs of employers
- Include practical experience in courses
- Include sector specific work placements as a n integral part of the study programme
- Facilitate relations between graduates and companies

4. Do we need more Pharmaceutical/ICT/Accountancy graduates who are subject specialists (which?) or more who possess broader cross-disciplinary knowledge and skills (which)?

TOPIC 3: SYNERGY AMONG INSTITUTIONAL ACTORS

1. What is your perception as an employer of other institutional actors on graduates' employability skills?
2. What collaboration takes place between the HEIs and the business sector?
3. Please rate the importance of cooperating with HEIs in the design of curricula and study programmes (1 being the highest)
- Very important
- Rather important
- Rather unimportant
- Not important at all
4. Which are the key developmental barriers to cooperation from the University and employers' point of view?
5. Are there any systems for informing HEIs and graduates about what to expect from HE graduates?

TOPIC 4: THE LABOUR MARKET AND EMPLOYMENT

The Labour Market

1. What are the main challenges of the future labour market?
- Shortage of applicants with the right skills
- Offering a competitive starting salary
- Offering a competitive graduate training and development programme
2. Due to changes in technology, financial markets and product globalisation, the labour market has not responded fast and has introduced systems such as part-time work and flexible hours. Have these systems been introduced in your organisation?
3. In effect, the credentials in the competition for labour market jobs would be less valued due to an increase in student enrolment. Do you agree?
4. On the other hand, more specialised graduates tend to get better jobs with higher earnings. (Boden et al., 2010, p.20). Is this true?

Employment

1. Would you say that when employing graduates, the selection does not only depend on whether specific job requirements can be met but also the relativity to other job seekers and the number of jobs available?
2. Have you ever come across the fact that graduates may be employable but not employed due to the lack of positions?
3. Do you, as an employer, recruit a University graduate for any given post at a cheaper price due to oversupply, since the HEIs do not present a cost to the employers?
4. Would you prefer to employ: a graduate who studied overseas; a graduate from the HEIs in Malta or a graduate from educational providers representing a foreign university? What are the reasons for your choice?
5. Do nationality, family background, course duration and disabilities condition your assessment of the graduate?
6. Do you think Government, HEIs and yourselves are doing enough to make cross-border employment possible for graduates?
7. Do you think Government and HEIs are doing enough to make cross-border employment possible for graduates?

TOPIC 5: SKILLS REGIME

What are the employability skills that graduates should have for the labour market?

**'Work skills'* include skills in information and communications technology (ICT), how to solve problems, work as teams, supervise and lead.

1. Do you know what to expect from an undergraduate degree?
2. We have often heard complaints and concerns expressed by employers about deficiencies in skills in their new graduates. What are these skills deficiencies?
3. Which actions do you think HEIs should take to improve the employability of graduates?
4. In some academic disciplines, high education awards and IT accreditation by major companies are important for competition in the labour market. Is this true for your organisation?
5. Skills need to be continually updated due to the changing requirements in the labour market. Does your organisation update graduates' skills? What is your current mode of provision?

TOPIC 6: SKILLS GAPS

Definition: A skills gap is the difference in the skills required on the job and the actual skills possessed by the employees. A skill gap arises when HEIs struggle to keep pace with economic growth, causing market failures.

1. To what extent are you concerned about skills gaps of graduates in the labour market?
2. What are the skills gaps in Pharmacy/ICT/Accountancy? Describe them briefly.
3. What do you think are the factors affecting the skills gaps in these disciplines?
4. How does your organisation deal with the skill deficits and shortages?
5. Government has tried to introduce creative pathways to address skills gaps. For example MCAST programmes. Are these courses addressing your labour market requirements, at least in the short-term?
6. How can HEIs improve graduates' chances of finding a job (or is there a perceived gap)?
7. How do you seek to influence actors in addressing the 'perceived' gaps?
8. How has EU funding been utilised to address graduate skills gaps in the labour market?
9. What could HEIs, the Government and the EU do to minimise or prevent skill deficits and/or skill shortages?

Appendix 17: Alphabetical Index of Agencies, Associations, Institutions, Systems and Guidelines

(Information extracted from publicly available information on websites, official documents and corporate literature listed in alphabetical order below).

Name Established date Regulating Legislation Powers and functions	Academic Programmes Quality and Resources Unit (APQRU) 2007 / It provides administrative support to academic staff in the planning stages of new and updated programmes of study in order to ensure that the processes set up to ensure quality outcomes are followed. APQRU facilitates the provision of advice in connection with physical resources and other costs associated with academic programmes.
Name Established date Regulating Legislation Powers and functions	Accountancy Board 1979 Accountancy Act (Laws of Malta, Cap 381) It regulates admission to the Accountancy profession in Malta and is entrusted with: the issue of accountants' warrants and auditors' practising certificates after making their recommendations to the Minister for Finance; the registration of firms of accountants and auditors; keeping a register of the above; appointment of the Quality Assurance Oversight Committee (QOAC); dealing with cases leading to the suspension or withdrawal of warrants or practising certificates; advising or making recommendations and expressing its views to the Minister; and such other functions arising from any law or as may be delegated to it by the Minister under the Accountancy Profession Act.
Name Established date Regulating Legislation Powers and functions	Bologna Process 1999 The Bologna Declaration Its aim is to facilitate the mobility of students, graduates and higher education staff members; prepare students for their future careers and to offer broad access to higher education. Available from: http://europa.eu/education/higher-education/bologna_en.htm [Accessed 02/04/2013].
Name Established date Regulating Legislation Powers and functions	Chamber of Pharmacists 1900 Registered trade union It is a registered trade union open to all pharmacists practising in hospitals, administration, community, marketing, academia and industry – linking all branches of the profession. It is the only pharmacy professional body with a right to negotiate terms and conditions of service with government and others. This trade union is a source of professional advice on problems regarding the profession.
Name Established date Regulating Legislation Powers and functions	Confederation of Malta Trade Unions (CMTU) 1959 Registered as a trade union CMTU was set up in August 1959 to improve generally the economic and social conditions of employees, improve friendly relations between the federated organisations and to further cooperation and mutual consultation between them. It has no political party affiliations. It has seven affiliate members - Malta Union of Bank Employees - MUBE, Unjoni Haddiema Maghqudin - UHM, Medical Association of Malta - MAM, Union Haddiema Universita Malta -UHUM, Malta Union of Professional Psychologists - MUPP, Lotto Receivers Union - LRU, Malta Chamber of Pharmacists – MCOP.

Name Established date Regulating Legislation Powers and functions	Copenhagen process 2002 The Copenhagen Declaration It is the'vocational education and training' in the Member States and focuses on the challenges identified in the Lisbon strategy: strengthens the European dimension of VET; improves 'transparency, information and guidance systems; recognises competences and qualifications', including non-formal and informal learning; and promotes cooperation in quality assurance. Available from: http://www.eqavet.eu/gns/news/latest-news/13-04-25/Progress_Report_on_the_implementation_of_the_EQAVET_Framework_2012.aspx [Accessed 13/04/2013].
Name Established date Regulating Legislation Powers and functions	Directorate of Pharmaceutical Affairs (DPA) 2013 Directive 89/105/EEC; LN 58/09; Social Security Act Cap. 318 Article 23 It develops equitable and sustainable pharmaceutical policies for the National Health Services in Malta. It ensures that policies are implemented effectively through continual and systematic monitoring. It promotes excellence in patient care by adding value to individual patient care through assuring safe, accurate, rational and cost-effective use of medicines to all.
Name Established date Regulating Legislation Powers and functions	Education and Training 2010 2010 / It supports activities that involve 'exchanges of experience and good practice, joint policy development, benchmarking and measurement of progress.' Available from: http://ec.europa.eu/education/policies/2010/doc/compendium05_en.pdf [Accessed 13/04/ 2013].
Name Established date Regulating Legislation Powers and functions	Employment and Training Corporation 1990 Employment and Training Services Act (Laws of Malta, Cap. 452) It recommends policies and implements initiatives aimed at empowering, assisting and training jobseekers to facilitate their entry or re-entry into the active employment market, promoting workforce development through skills and competency development and by assisting employers in their recruitment and training needs.
Name Established date Regulating Legislation Powers and functions	Entrepreneurship Unit 2010 / It promotes the development of a high-tech Science and Technology entrepreneurship culture at the University of Malta, and in the wider Maltese context. The Entrepreneurship Unit organises courses and other initiatives to support budding science and technology entrepreneurs.
Name Established date Regulating Legislation Powers and functions	Erasmus+ 2013 European Commission It seeks to enhance the quality and reinforce the European Higher Education Area, by encouraging transnational cooperation between higher education institutions, promoting mobility for students and higher education teaching, administrative and technical staff. A list of Erasmus+ placements is available from: http://www.um.edu.mt/int-eu/erasmusplus/outgoing/placements/ict [Accessed 19/06/2016].
Name Established date Regulating Legislation Powers and functions	eSkills (Malta) Foundation 2014 / It is a coalition of various representatives from the government, industry

	and education who work together to create the skills base and life-long quality growth required for a digitally enabled knowledge economy. It is important for Malta to be innovative and competitive and the foundation aims to instigate changes that help the country in developing a strong and suitable workforce equipped with the right digital skills.
Name Established date Regulating Legislation Powers and functions	Extended Skills Training Scheme (ESTS); Training Assistance Scheme (TAS) Employment and Training Services Act (Laws of Malta, Cap 452); LN 73 of 1998; LN 82 of 1990 These schemes involved training placements for apprentices in the respective schemes. They were assigned according to departmental requirements after having taken into consideration the number of apprentices available in their respective categories and the training facilities of the Departments and Public Sector Organisations.
Name Established date Regulating Legislation Powers and functions	Europass 2012 European Commission It is a tool consisting of five documents to make skills and qualifications understood throughout Europe. Two documents are to be completed by the individuals themselves: the Europass CV and the Language Passport, a self-assessment tool for language skills and qualifications. The other three documents (Europass mobility, the Certificate Supplement and the Diploma Supplement) are used by education and training authorities.
Name Established date Regulating Legislation Powers and functions	Europe 2020 Integrated Guidelines 2010 European Commission Guideline 1: Ensuring the quality and the sustainability of public finances; Guideline 2: Addressing macroeconomic imbalances; Guideline 3: Reducing imbalances in the euro area; Guideline 4: Optimising support for R&D and innovation, strengthening the knowledge; triangle and unleashing the potential of the digital economy; Guideline 5: Improving resource efficiency and reducing greenhouse gases emissions; Guideline 6: Improving the business and consumer environment and modernising the industrial base; Guideline 7: Increasing labour market participation and reducing structural unemployment; Guideline 8: Developing a skilled workforce responding to labour market needs, promoting job quality and lifelong learning; Guideline 9: Improving the performance of education and training systems at all levels and increasing participation in tertiary education; Guideline 10: Promoting social inclusion and combating poverty.
Name Established date Regulating Legislation Powers and functions	European Credit Transfer and Accumulation System (ECTS) 1989 European Commission It is a uniform scheme in which all levels, with the exception of Level 1 (with 40 credits), are to have 60 credits per one full-time year of study or training. One credit represents 25 hours of formal (contact hours), informal (self-study) and/or non-formal learning (backup training and learning experiences). The scope of this proposition is to develop a system which is similar to both the European credit transfer system (ECTS) and the European credit vocation and educational training (ECVET), and which will enable a smooth lifelong learning process where one can easily move up the Malta qualifications framework (MQF).
Name Established date Regulating Legislation Powers and functions	European Higher Education Area (EHEA) 1999 Sorbonne Declaration It refers to the use of "common tools, implementation of reforms on higher education on the basis of common key values – such as freedom of

	expression, autonomy for institutions, independent students unions, academic freedom, free movement of students and staff by 48 countries. Through this process, countries, institutions and stakeholders of the European area adapt their higher education systems making them more compatible and strengthening their quality assurance mechanisms. The main goal is to increase staff and students' mobility and to facilitate employability" (EHEA website, 2016) (Available from: http://www.ehea.info/ [Accessed 12/10/2016].
Name Established date Regulating Legislation Powers and functions	European Qualifications Network (EQF) for lifelong learning 2008 European Commission It provides an overarching framework which EU countries implement by relating their national qualification levels to a set of European reference levels. The EQF focuses on qualifications rather than on the education and/or training that are required to get them. A qualification in one country can be compared to one in another country.
Name Established date Regulating Legislation Powers and functions	European Skills, Competences, Qualifications and Occupations (ESCO) 2013 European Commission It is a multilingual classification is a tool which identifies and categorises European skills, competences, qualifications and occupations relevant for the EU labour market, education and training.
Name Established date Regulating Legislation Powers and functions	European Skills Panorama 2012 European Commission It is an EU portal which gives access to data, information and evidence on trends in skills and jobs across Europe. It provides an overview of the skills in demand and on offer in each EU country, as well as the short and medium term skill trends in a number of sectors and occupations. It allows users to compare this information with the EU average and with other EU countries.
Name Established date Regulating Legislation Powers and functions	General Workers' Union (GWU) 1943 Registered as a trade union It is a trade union that tries to give a 'voice' to the working class in the national arena.
Name Established date Regulating Legislation Powers and functions	HelloIT 2004 / It consisted of 14 initiatives, including myWeb: ICT education for all; myWeb for the industry and the public sector; Community Technology and Learning Centres; European Computer Driving License training (ECDL); Public Internet Access Points and Internet Centres; Affordable Hardware for Everyone; New Broadband Packages; Affordable Software; Taking Technology Home; E-Learning: A Virtual Classroom; Internet *bil-Malti*; Learning ICT on TV; and Access to the Internet through Electric Power Lines.
Name Established date Regulating Legislation Powers and functions	Institute of Tourism Studies (ITS) 1987 Education Act (Laws of Malta, Cap 327) It is an institution of higher education aimed at meeting the changing needs of the Travel, Hospitality and Tourism Industry. Available from: www.yesemployability.eu [Accessed 02/08/2013].

Name Established date Regulating Legislation Powers and functions	JobsPlus 2013 Jobsplus Act 2016 (Laws of Malta, Cap. 343) A committee was set up where social partners/representatives of the political parties advise and co-ordinate with Government issues relating to the labour market. The Committee's remit is to: design a holistic active labour market policy that addresses the long-term needs of the labour market; ensure that there is funding to promote an on-going active labour market policy; co-ordinate with the Ministry for Education and Employment the implementation of active labour market policies; monitor labour market and training programmes; analyse the effectiveness/efficiency of labour market and training programmes; make recommendations to the Ministry for Education and Employment (MEDE) on how labour market and training programmes can be improved.
Name Established date Regulating Legislation Powers and functions	Malta Chamber of Commerce, Enterprise and Industry (MCCEI) 1848 Recognised by the Laws of Malta It aims to provide enhanced 'hands-on' services to individual members, to mobilise sectors, associations and other groupings to pursue common agendas, to effectively respond to current issues and protect members' interests; and – most fundamentally – to shape the policies which affect Maltese entrepreneurs.
Name Established date Regulating Legislation Powers and functions	Malta College of Arts, Science and Technology (MCAST) 2001 Education Act, 2000 (Laws of Malta, Cap. 327) MCAST is Malta's public vocational education and training institution and is responsive to the needs of the individual and the economy. It has six institutes in Malta and the Gozo Campus, and 185 full-time and over 300 part-time vocational courses ranging from certificates to degrees (MQF Level 1 to Level 6). MCAST collaborates with local industries to ensure that the knowledge, skills and competencies in the curricula are relevant the economy.
Name Established date Regulating Legislation Powers and functions	Malta Council for Science and Technology (MCST) 1988 / It acts for and on behalf of the Foundation for Science and Technology. It advises government on science and technology policy and is responsible for the National Research and Innovation Strategy 2020 and related Action Plan. The Council is responsible for supporting entities undertaking large-scale multi-national research activities and also enters into Bilateral Agreements with other countries. Available from: http://www.mcst.gov.mt/HomePage.aspx [Accessed 30/03/2017].
Name Established date Regulating Legislation Powers and functions	Malta Employers Association (MEA) 1965 Statute It is a constituted body which brings together employers from all sectors of industry and commerce in Malta. It is, in effect, the "trade union" of employers, formally registered as such under the Employment and Industrial Relations Act (2002). Its principal purpose is the regulation of relations between employers, workers and trade unions. It is bound to decisively influence 1. Formation of policies at national level which lead to the development of a culture positively encouraging enterprise; 2. Creation of economic and social conditions favourable to the profitable growth and competitiveness of Maltese business and also in the interests of employers in general; 3. Development of productive employment.

Name Established date Regulating Legislation Powers and functions	Malta Enterprise (ME) 2003 Malta Enterprise Act, (Laws of Malta, Cap. 463) It is the national development agency responsible for promoting and facilitating international investment in the Maltese Islands by offering investors excellent business opportunities and tailored services. Malta Enterprise network operates in various countries around the globe, with offices or representation in embassies and consulates in North Africa, the Middle East, Asia, the United States and Australia. The Corporation also coordinates initiatives to promote the Islands' economic growth attractiveness. It is also responsible for the growth and development of Maltese enterprises both locally and overseas. We help them set up, expand, innovate and access global markets; thus sustaining economic growth and retaining and increasing employment. ME together with Malta Industrial Parks Ltd, the Corporation is responsible for the administration and maintenance of various industrial estates and the factories located within. Malta Enterprise, work closely with the Better Regulation Unit, to ensure that Better Regulation principles and procedures are applied consistently throughout the Agency.
Name Established date Regulating Legislation Powers and functions	Malta Financial Services Authority (MFSA) 1988 The Malta Financial Services Authority Act (Laws of Malta, Cap. 330) The Authority is responsible for the regulation, monitoring and supervision of all financial activity and for authorisation. MFSA's educative consultative council (ECC) is instrumental in the identification, design and implementation of training and development programmes for prospective and existing employees within the finance sector.
Name Established date Regulating Legislation Powers and functions	Malta Institute of Accountants (MIA) 1942 Statute It is the *'voice'* of the accountancy profession in Malta providing professional guidance, technical support and continuing professional education. It has administrative, technical and educational functions. It runs the ACCA/ACA programmes.
Name Established date Regulating Legislation Powers and functions	Malta Qualifications Framework (MQF) 2007 Education Act 1988, Malta Qualifications Framework for Lifelong Learning Regulations (Laws of Malta, Cap. 327, SL 327.431) It was derived from the European Qualifications Framework (EQF), based on learning outcomes. The EQF relates different countries' national qualifications systems to a common European reference framework and acts as a catalyst for reforms. With the establishment of the MQF, qualifications have become comparable and transparent.
Name Established date Regulating Legislation Powers and functions	Malta Qualifications Recognition Information Centre (MQRIC) 2002 Reciprocal Recognition of Qualifications (Laws of Malta, Act XVIII) It is the competent body within the NCFHE that recognises qualifications against the Malta Qualifications Framework (MQF). It provides recognition and comparability of both academic and vocational qualifications, using both the Malta Qualifications Framework (MQF) and the European Qualifications Framework (EQF) to provide recognition advice on both local and international qualifications. It also assists in the recognition of Maltese qualifications abroad. Available from: https://ncfhe.gov.mt/en/services/Pages/All%20Services/mqric.aspx [Accessed 02/03/2017].

Name Established date Regulating Legislation Powers and functions	Malta Information Technology Agency (MITA) 2009 / It is the central driver of Government's Information and Communications Technology (ICT) policy, programmes and initiatives in Malta. Its role is to deliver and implement the assigned programmes as set out in the Digital Malta National ICT Strategy 2014-2020, and as directed by the Minister for Competitiveness and Digital, Maritime and Services Economy. MITA manages the implementation of IT programmes in Government to enhance public service delivery and provides the infrastructure needed to execute ICT services to Government. It is responsible to propagate further use of ICT in society and economy and to promote and deliver programmes to enhance ICT education and the use of ICT as a learning tool.
Name Established date Regulating Legislation Powers and functions	Medicines Authority (MA) 2003 Medicines Act (Laws of Malta, Cap. 458) Its role is to protect and enhance public health through the regulation of medicinal products and pharmaceutical activities. The objectives of the Medicines Authority are to perform duties delegated by the Licensing Authority through the Medicines Act.
Name Established date Regulating Legislation Powers and functions	National Commission for Further and Higher Education (NCFHE) 2012 Education Act, (Laws of Malta, Cap 327, SL. 2012) It focuses on: providing accreditation to further and higher educational institutions; providing accreditation to programmes or courses of studies at further and higher education levels; quality assurance of both educational institutions and programmes or courses; recognition of obtained national or international qualifications as well as prospective qualifications; validation of informal and non-formal learning; research and policy recommendation on issues related to further and higher education.
Name Established date Regulating Legislation Powers and functions	National Commission for Higher Education (NCHE) 2006 Education Act (Laws of Malta, Cap. 327) Its role was to promote more and better further and higher education to empower all students with knowledge and skills for their future. It was responsible for promoting structured dialogue between all further and higher education institutions; supporting all key actors with research, data and information about the sector; developing strategies for further and higher education; preparing key performance indicators' and benchmarking the sector against international developments. Available from: http://www.llp.eupa.org.mt/ [Accessed 02/04/2013].
Name Established date Regulating Legislation Powers and functions	National ICT Strategy 2004-2006 2004 / It proposed thirteen objectives namely, step-up the fight against the digital divide across all levels of society; promote a holistic education and accessibility to technology; use ICT to improve further the quality of life of Maltese citizens and to impact positively on the tourist experience in Malta; use ICTs as a management tool within the public sector as an efficiency-realisation mechanism and as a vehicle to improve the quality of working life of public employees; proliferate the delivery of first class, accessible and secure Government services; promote the ICT culture in SMEs with the objective of making them derive the benefits of introducing ICT to their operations; enable and empower businesses to gain access to the larger global market by participating in the *e*-Business community; consolidate the external ICT environment; make the internet a secure place, build confidence, trust and security in the use of ICTs; strengthen the local

	indigenous ICT private sector and support ICT entrepreneurship; Internationalise the Maltese ICT industry to compete in the global environment; transpose the benefits of EU membership in the attainment of a first class information society; and promote the role/contribution of the Maltese information society in the global ICT.
Name Established date Regulating Legislation Powers and functions	National ICT Strategy for Malta 2008-2010 - The Smart Island 2008 / It proposed with the following key streams: delivering a next-generation ICT environment (infrastructure); making ICT a social equaliser; developing a smart workforce; using ICT for a better quality of life; transforming public service delivery and enhancing governance; creating wealth through ICT (e-business) and developing a world-leading ICT industry.
Name Established date Regulating Legislation Powers and functions	National Statistics Office (NSO) 2000 Malta Statistics Authority Act (Laws of Malta, Cap. 422) The executive arm of the Malta Statistics Authority and responsible for the collection, compilation, analysis and publication of a wide range of statistical information and related matters. This does not prevent other government departments or institutions from collecting their own statistical data for internal purposes.
Name Established date Regulating Legislation Powers and functions	National Strategy for Information Technology (NSIT) 2007 / Ten strategic directions were: An Information Technology Culture; IT as a means for Education and In-Career Training; IT Human Resources; Assistance for IT Research and Technology for Development (RTD) and Business Ventures; International Brokerage of Services and Goods; IT Industry; Business Process Re-engineering; Sector-wide IT Networks and Beyond; Telecommunications Regulation and Infrastructure; and a Legislative Framework for IT.
Name Established date Regulating Legislation Powers and functions	Pharmaceutical Research Based Industry Malta Association (PRIMA) 2006 / It is affiliated with the European Federation of Pharmaceutical Industries and Associations (EFPIA) which is the representative body of the pharmaceutical industry in Europe. Its members are the national industry associations of European countries and leading pharmaceutical companies. PRIMA's primary mission is to promote pharmaceutical discovery and development in Malta and to bring to the market medicinal products in order to improve human health.
Name Established date Regulating Legislation Powers and functions	Pharmacy Council 2003 Health Care Professions Act (Laws of Malta, Cap. 464) It recommends granting/withdrawal of licences to pharmacists to practise their profession; keeps, publishes and updates registers in respect of the pharmaceutical profession, prescribes and maintains professional and ethical standards for pharmacists and pharmacy technicians and qualified persons; advises the Minister on any matter affecting the pharmaceutical profession. The three registers include: the Register of Pharmacists, the Register for Pharmacy Technicians and the Register for Qualified Persons.
Name Established date Regulating Legislation	Quality Assurance Oversight Committee (QAOC) 2009 /

Powers and functions	It is the policy-making body and regulator of the quality assurance function in the accountancy and auditing profession in Malta. Its primary function is to oversee, support and appraise the work of the Quality Assurance Unit (QAU) and follow up action by audit firms/sole practitioners in response to the QAU's visit recommendations. It also provides a formal communication link between the QAU, the Accountancy Board and audit firms/sole practitioners.
Name Established date Regulating Legislation Powers and functions	University of Malta 1769 Education Act (Laws of Malta, Cap. 327) It is the highest teaching institution in Malta, publicly funded and open to all those who have the requisite qualifications. The University's structures are in line with the Bologna Process and the European Higher Education Area. The governing bodies of the University are the Council and the Senate and it has fourteen faculties.
Name Established date Regulating Legislation Powers and functions	University of Malta – Gozo Campus 1992 Education Act (Laws of Malta, Cap. 327) The University of Malta – Gozo campus was set up with the aim of assisting in the logistical aspects of degree and diploma courses which are from time to time offered in Gozo by the University of Malta. Most Gozitans graduate with a bachelor's degree, an average of 79 graduates annually. The majority of graduates are women (57.1%) (NSO statistics, 2010).
Name Established date Regulating Legislation Powers and functions	Unjoni Haddiema Maghqudin (UHM) 1978 Registered as a trade union The Malta Workers' Union (UHM) is a national trade union in Malta. It was founded on 29 September 1966, under the name Malta Government Clerical Union (MGCU), and changed its name in 1978 to UHM. Its objectives are to unite workers into one strong homogeneous body; to enhance the dignity of the worker and to improve his conditions of work as well as his economic and social standing; to gain proper representation on bodies where its presence would further the interests of its members; to achieve and maintain unity of purpose and action among members; to foster trade unionism among all workers and at all levels; to educate workers in those matters that affect them; to ascertain a good standard of living for pensioners and those who retire from work.

Source: researcher's compilation and design, 2016

Appendix 18: Comparison of courses leading to the Accountancy Profession

M. Accountancy (Honours)	ACCA	ACA
Accountancy **Year One** **Semester 1: Compulsory Units** ECN1011 Introductory Micro-Economics EMA1008 Quantitative Analysis for Business 1 EMA1100 Business Statistics 1 PBL1016 Elements of Maltese Law 1 PPL1021 Sociology of Industrial Societies PPL1924 Industrial Psychology Either ACC1721 Financial Accounting and Control 1 Or ACC2112 Accounting Theory and Practice 1 **Recommended Optional Units** ENG1062 English Proficiency CST1021 Communications: An Overview IOT1008 An Introduction to Creativity TTC1107 Introduction to Mediterranean History and Culture **Semester 2: Compulsory Units** ECN1021 Introductory Macro-Economics EMA1009 Quantitative Analysis for Business 2 EMA1200 Business Statistics 2 MGT1011 Introduction to Business Management MRK1003 Business and Academic Report Writing PBL1017 Elements of Maltese Law 2	**Fundamentals (nine papers in total)** **Knowledge** F1 Accountant in Business F2 Management Accounting F3 Financial Accounting **Skills** F4 Corporate and Business Law F5 Performance Management F6 Taxation F7 Financial Reporting F8 Audit and Assurance F9 Financial Management	**Certificate level (six papers in total)** Accounting Assurance Business and Finance Law Management Information Principles of Taxation

PPL1011 Policy for Business Either ACC1731 Financial Accounting and Control 2 Or ACC2113 Accounting Theory and Practice 2 **Recommended Optional Units** EMA1007 Business Ethics 1 MRK1000 Marketing Principles and Practice IOT1004 Design and Innovation IOT1009 A Toolkit for Thinking Out of the Box		
Year Two **Semester 1:Compulsory Units** ACC2211 Cost Accounting 4 ECTS (NC) ACC2821 Civil Law for Accountants 4 ECTS MGT2021Business Management 4 ECTS MGT2031Operations Research 4 ECTS Either ECN2217 Intermediate Microeconomics ECN2218 Intermediate Macroeconomics Or PPL2044Interpreting Data for Policy Analysis PPL3181 Decision-Making **Recommended Optional Units** ENG1062 English Proficiency EST2020 Small States and the European Union IOT2002 Communication and Innovation IOT2003 Foresight - A Tool for Shaping Futures IOT2005 Leadership and Organisational Innovation MGT2315 Careers and Job Search Skills TRS2281 Travel and Transportation Management BKF2011Banking 1 BKF2071Principles of Finance	The Professional level is divided into two modules; **Essentials and Options**. Both of the modules at Professional level have been set at the same ability level as a Master degree. **Professional (five papers in total)** **Essentials** P1 Governance, Risk and Ethics P2 Corporate Reporting P3 Business Analysis **Options (two to be completed)** P4 Advanced Financial Management P5 Advanced Performance Management P6 Advanced Taxation *(mandatory by MIA)* P7 Advanced Audit and Assurance *(mandatory by MIA)*	**Professional level (six papers in total)** Business Planning Business Strategy Audit and Assurance Financial Accounting and Reporting Financial Management Tax Compliance

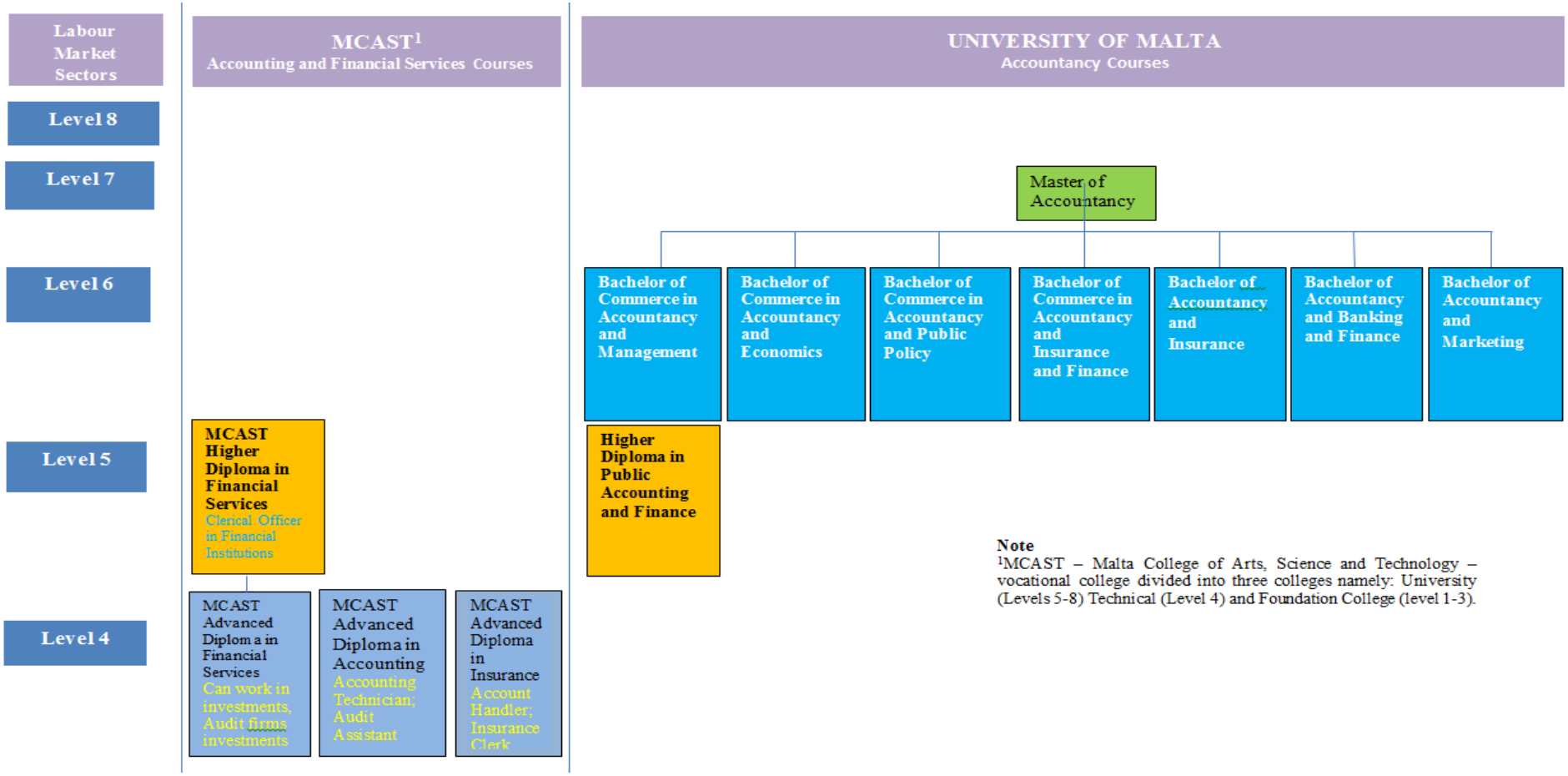
INS2090Insurance Financial Management MGT2031Operations Research MRK2000 Marketing Foundations PPL2223Leadership in Public Affairs **Semester 2: Compulsory Units** ACC2221 Costing Methods ACC2841 Commercial Law for Accountants ACC2851 Accounting Recognition and Measurement **Recommended Optional Units** IOT2006 Creativity, Innovation and Digital Technologies: An Introduction IOT2008 Innovation and Entrepreneurship: Practical Approaches MGT2344 Creativity and Personal Development ACC2221Costing Methods BKF2041Financial Services Law BKF2050Foundations of Risk Management BKF3111Practical Issues in Banking ECN2210Introduction to International Economics ECN2216Economics of Social Policy ECN2310Introduction to Political Economy INS2080Insurance Management MRK2018Marketing Communications Planning PPL2077Issues In Public Policy		
Year Three **Semester 1: Compulsory Units** ACC3411 Principles of Auditing ACC3461 Specialised Accounting ACC3821 Company Law for Accountants MGT2345Enterprise Information Systems	**Professional Ethics module** Professional ethics is covered in 11 of the 16 exam papers. This includes all papers at Professional level and three of the Essential performance objectives. The aim of the module is to introduce you to a range of ethical ideas.	**Advanced Level (three papers in total)** Corporate Reporting Strategic Business Management Case study

Semester 2: Compulsory Units ACC3221 Fundamentals of Management Accounting ACC3311 Elements of Taxation ACC3521 Managerial Finance INS4021 Insurance	**Practical experience requirement** A key part of the ACCA Qualification is getting relevant practical experience in the workplace. The ACCA Qualification closely links practical experience to these studies. Performance objectives are part of the requirements. They set out a clear guide for the activities to be carried out and what should be achieved in the workplace. Standards are outlined and attitude to be adopted as a trainee accountant.	
M. Accountancy (Honours) **Semester 1: Compulsory Units** ACC5957 Advanced Audit and Assurance ACC5958 Advanced Aspects of Financial Reporting 1 ACC5959 Advanced Taxation ACC5962 Corporate and Financial Services Legislation **Elective Units**: All students must register for **ONE** of the following: ACC5964 Financial Instruments and Risk Analysis ACC5965 Public Sector Accounting ACC5982 International Accounting MGT5815 Entrepreneurship and Innovation MGT5825 Project Management **Supplementary Unit** MGT3181Applied Research Tools for Business **Semester 2: Compulsory Units** ACC5960 Advanced Financial Management 1 ACC5961 Advanced Management Accounting 1 ACC5963 Research Issues in Accountancy	**ESSENTIALS (all nine to be done)** Professionalism, ethics and governance • Demonstrate the application of professional ethics, values and judgement. • Contribute to effective governance of an organisation. • Raise awareness of non-financial risk. Personal effectiveness 4 Manage self 5 Communicate effectively 6 Use information and communications technology Business management 7Manage ongoing activities in your area of responsibility 8 Improve departmental performance 9 Manage an assignment	Ethics is integrated throughout the ACA qualification to develop students' ethical capabilities and be able to make the right decisions and justify them.

Year 2 **Semester 1: Compulsory Units** ACC5971 Dissertation ACC5966 Advanced Aspects of Financial Reporting ACC5967 Advanced Financial Management ACC5968 Advanced Management Accounting ACC5970 Risk Management and the Professional Accountant MRT5208 Business Ethics and Corporate Governance **Semester 2:** Compulsory Units ACC5969 Contemporary Issues and Development in Accountancy	**OPTIONS (four to be done)** Financial accounting and reporting 10 Prepare financial statements for external purposes. 11 Interpret financial transactions and statements Performance measurement and management accounting 12 Prepare financial information for management. 13 Contribute to budget planning and production 14 Monitor and control budgets Finance and financial management 15 Evaluate potential business/investment opportunities and the required finance options 16 Manage cash using active cash management and treasury systems. Audit and assurance 17 Prepare for and collect evidence for audit 18 Evaluate and report on audit Taxation 19 Evaluate and compute taxes payable 20 Assist with tax planning	

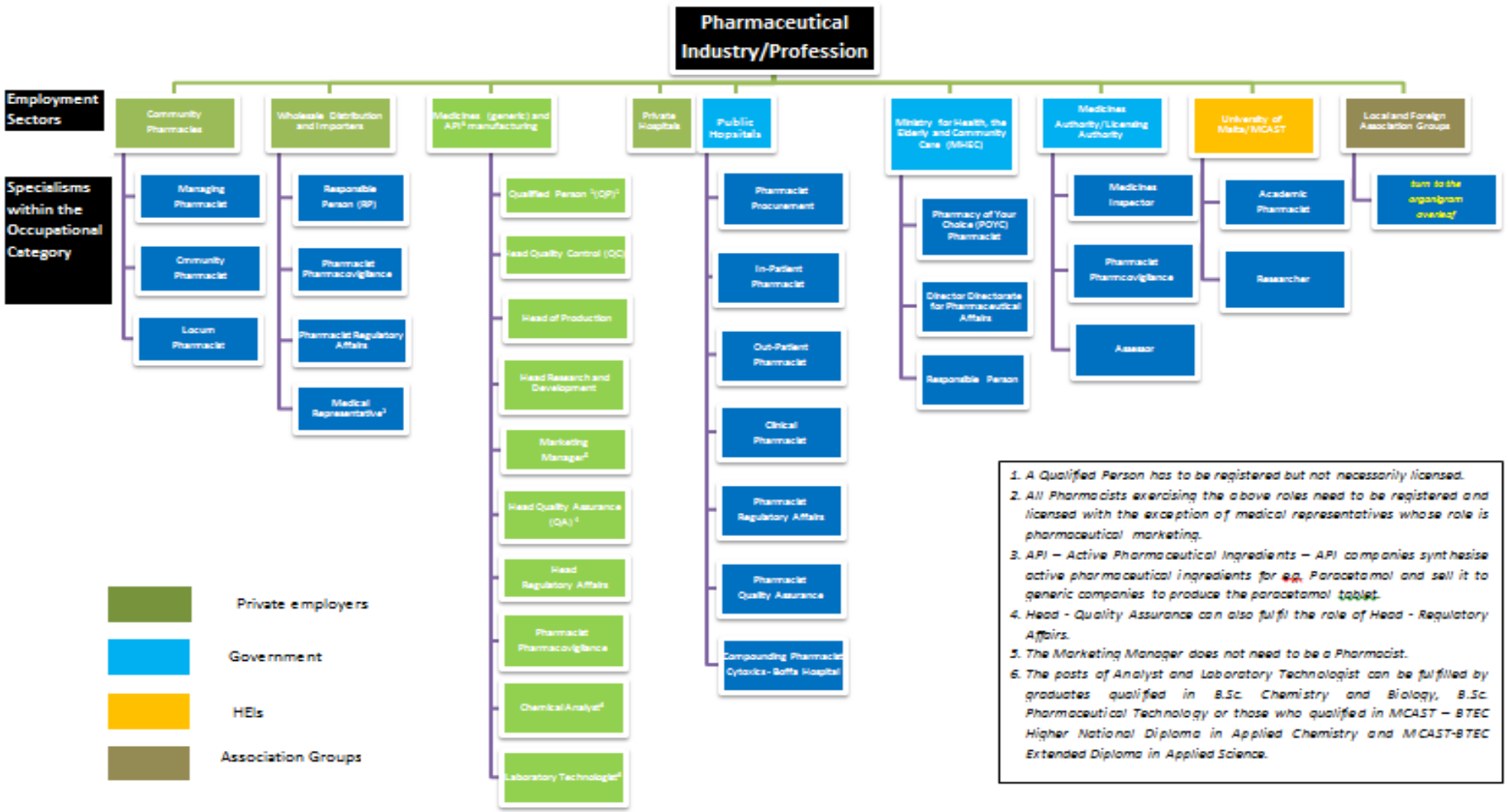
Source: Available from: http://www.um.edu.mt/fema/programme/PMACCFTT2-2014-5-O
http://www.accaglobal.com/ng/en/qualifications/glance/acca/details.html
http://www.icaew.com/~/media/corporate/files/qualifications%20and%20programmes/aca%20evolved/aca%20students/exams/aca%20syllabus%20and%20technical%20knowledge%20grids%202016.ashx [All Accessed 15/07/2016]

Appendix 19: HEIs' Accountancy course offerings



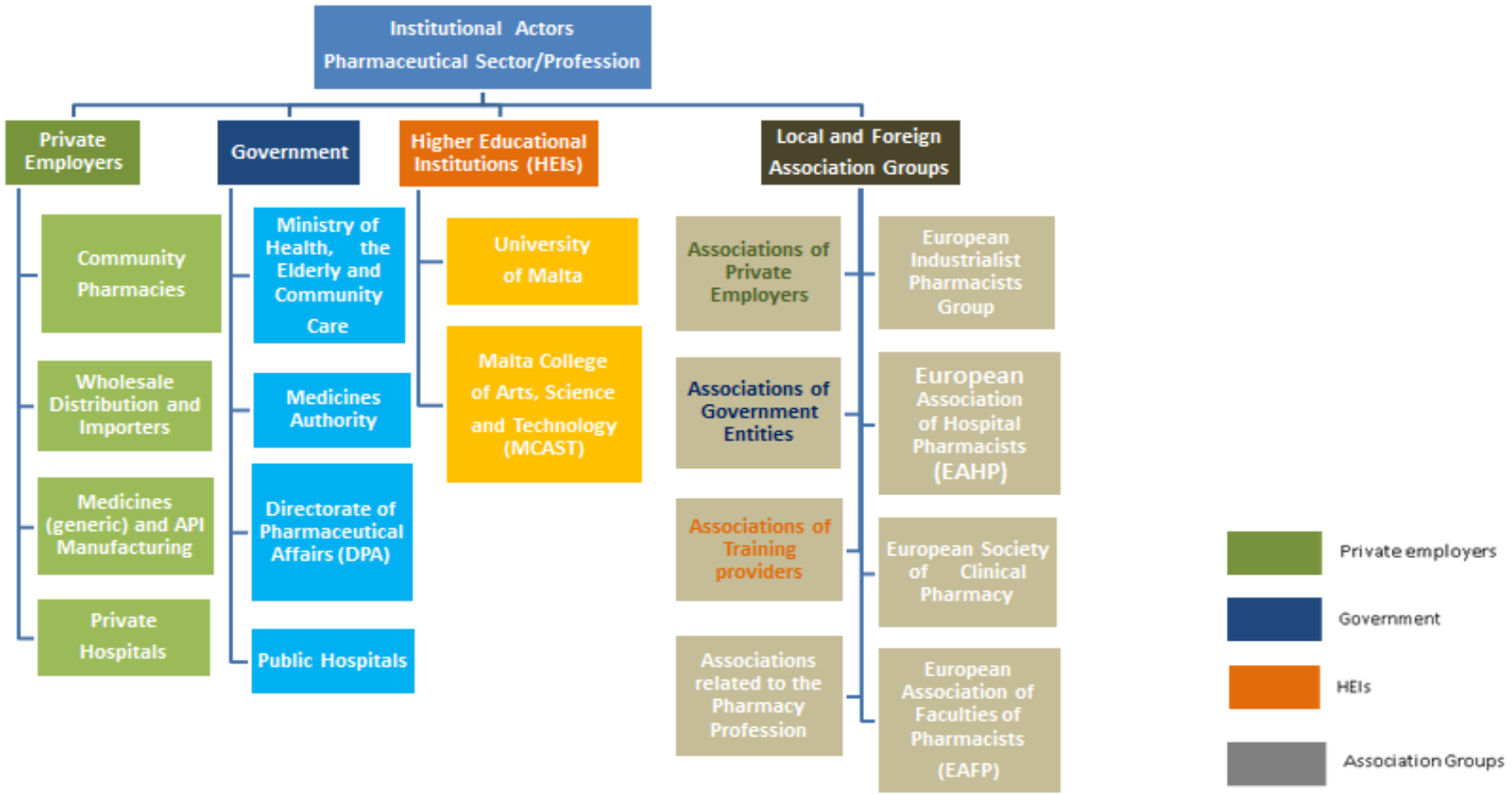
Source: author's analysis, compilation and design 2016

Appendix 20: Distribution of Pharmaceutical Groups by Employment



Source: author's analysis, compilation and design 2016

Appendix 21: Institutional Actors affecting employability skills in the Pharmaceutical Sector



Source: author's analysis, compilation and design 2016

Appendix 22: Postgraduate Diploma in Pharmacotoxicology

University of Malta, Faculty of Medicine and Surgery, Clinical Pharmacology and Therapeutics

CPH5500 Pharmacotoxicology (ECTS 6)

Level 5	Postgraduate Modular Diploma or Degree Course (2016)
Pre-requisite Qualifications	Bachelor Degree in Life Sciences, with a Chemistry and Biology component
Description	This study-unit will present current topics in pharmacotoxicology as they apply and relate to the pharmaceutical industry
Candidates will obtain a basic knowledge of toxicology which they would be able to apply in practice.	The study-unit will thus cover the following basic principles: • drug structure/pharmacological/toxicology action relationships; • drug pharmacokinetics: absorption, distribution, metabolism and elimination of drugs; • principal routes of drug administration; • basic principles of toxicology and toxicokinetics; • chemical, physical and microbiological factors that could potentially affect content uniformity, stability and bioavailability of drugs in the manufacturing process; • EU REACH directive.
Study-unit Aims The student will obtain an understanding of the fundamental principles involved in the actions and uses of medicines in clinical practice, in order to judge their significance for the manufacture of these pharmaceutical products.	This study-unit will thus aim to provide an overview of: General aspects of chemical structure/pharmacological action relationships in drugs; Give an overview of key therapeutic drug classifications with examples of disease states and their treatment with medicinal products; Biotransformation and kinetics: absorption, distribution, metabolism and elimination of drugs and its role on the pharmacodynamic effect; Biopharmaceutical aspects of dosage form design; Principles and assessment of toxicology; Mechanisms of toxicology; Production of sterile and non-sterile products and associated environmental controls; Interpretation of microbiological data; Safety, health and environment with respect to pharmaceutical drug manufacture; Pharmacovigilance related to quality monitoring; General implications of clinical knowledge of drugs upon facility design, plant segregation/isolation, cleaning verification and production scheduling; The regulatory requirements and REACH directive. Students will thus develop a critical, rational attitude to role of toxicology in drug manufacturing.
Learning Outcomes 1. Knowledge and Understanding	Apply basic principles in pharmacology and pharmacokinetics in the manufacture of pharmaceutical products; Describe the basic mechanisms of drug action and drug toxicology; Understand the role of risk assessment in pharmaceutical production; Outline the role of microbiological contamination in pharmaceutical production; Understand environmental risks of pharmaceutical production.
2. Skills	Apply knowledge of the toxicological properties of a pharmaceutical product and its effects when assessing whether a particular molecule should be introduced into their facility;

	outline the risks in terms of toxic effects for carry over of one substance into the batches of another substance; list the risks associated with handling particular molecules; assess risks associated with the accidental release of drug products and manufacturing related effluents into the environment; demonstrate an understanding of the sources and types of micro-organisms as related to pharmaceutical production.
Study unit type	Lecture and Independent Online Learning
Method of Assessment	Assessment Component/s Resit Availability Weighting Assignment 50% Examination (2 Hours) 50%

Source: University of Malta website 2016

This study-unit has been accepted by Malta Enterprise as a recognised certification and qualification under the *Get Qualified* scheme 2014.

Appendix 23: Responsibilities of Key Positions in Pharmaceutical Companies

Extract from EudraLex, 2013: EU Guidelines for Good Manufacturing Practice for Medicinal Products for Human and Veterinary use.

Full time Key Personnel in Pharmaceutical Manufacturing companies include:

1. **A Qualified Person/s**
2. **Head of Production**
3. **Head of Quality Control**
4. In larger Organisations, there is a Head of Quality Assurance.

1. The Responsibilities of a Qualified Person

(1) The qualified person, without prejudice to his relationship with the holder of the licence, shall be responsible to ensure that:
(a) each batch of medicinal products manufactured in Malta has been manufactured and checked in terms of the laws in force and is in accordance with the requirements of the marketing authorisation;
(b) in the case of medicinal products coming from third countries, irrespective of whether the product has been manufactured in the Community, each production batch has undergone in a Member State a full qualitative analysis, a quantitative analysis of at least all the active substances and all the other tests or checks necessary to ensure the quality of the medicinal product in accordance with the requirements of the marketing authorisation;
Provided that when the batches of medicinal products have already undergone the controls above mentioned in a Member State, they shall be exempt from further controls if they are accompanied by the control reports signed by the qualified person, and are marketed within the Community.
(2) The qualified person need not carry out the controls above mentioned in the case of imported medicinal products, where arrangements have been made by the Community with the exporting country to ensure that the manufacturer of the medicinal products applies standards of good manufacturing practice at least equivalent to those laid down by the Community, and to ensure that the controls referred to above have been carried out in the exporting country.
(3) The qualified person shall, in the case of medicinal products intended to be placed on the market in the European Union, ensure that the safety features referred to in regulation 3(o) of the Medicinal Products (Labelling and Packaging) Regulations have been affixed on the packaging.

Keeping of registers
It shall be the duty of the qualified person to keep a register to document and certify that each production batch satisfies the provisions of these regulations.
The said register shall be kept up to date as operations are carried out and must be made available for inspection by the Authority for at least five years.

Offences and penalties

Any breaches of the regulations laid down in the subsidiary legislation 458.36 shall be an offence and shall be liable to penalties under article 99(1) (a) of the Act.

2. The Responsibilities of the Head of the Production Department

(a) To ensure that products are produced and stored according to appropriate documentation in order to obtain the required quality;
(b) To approve the instructions relating to production operations and to ensure their strict implementation;
(c) To ensure that the production records are evaluated and signed by an authorised person;
(d) To ensure the qualification and maintenance of his Department, premises and equipment;
(e) To ensure the appropriate validations are done;

(f) To ensure that the required initial and continuing training of his Department personnel is carried out and adapted according to need.

3. The Responsibilities of the Head of Quality Control

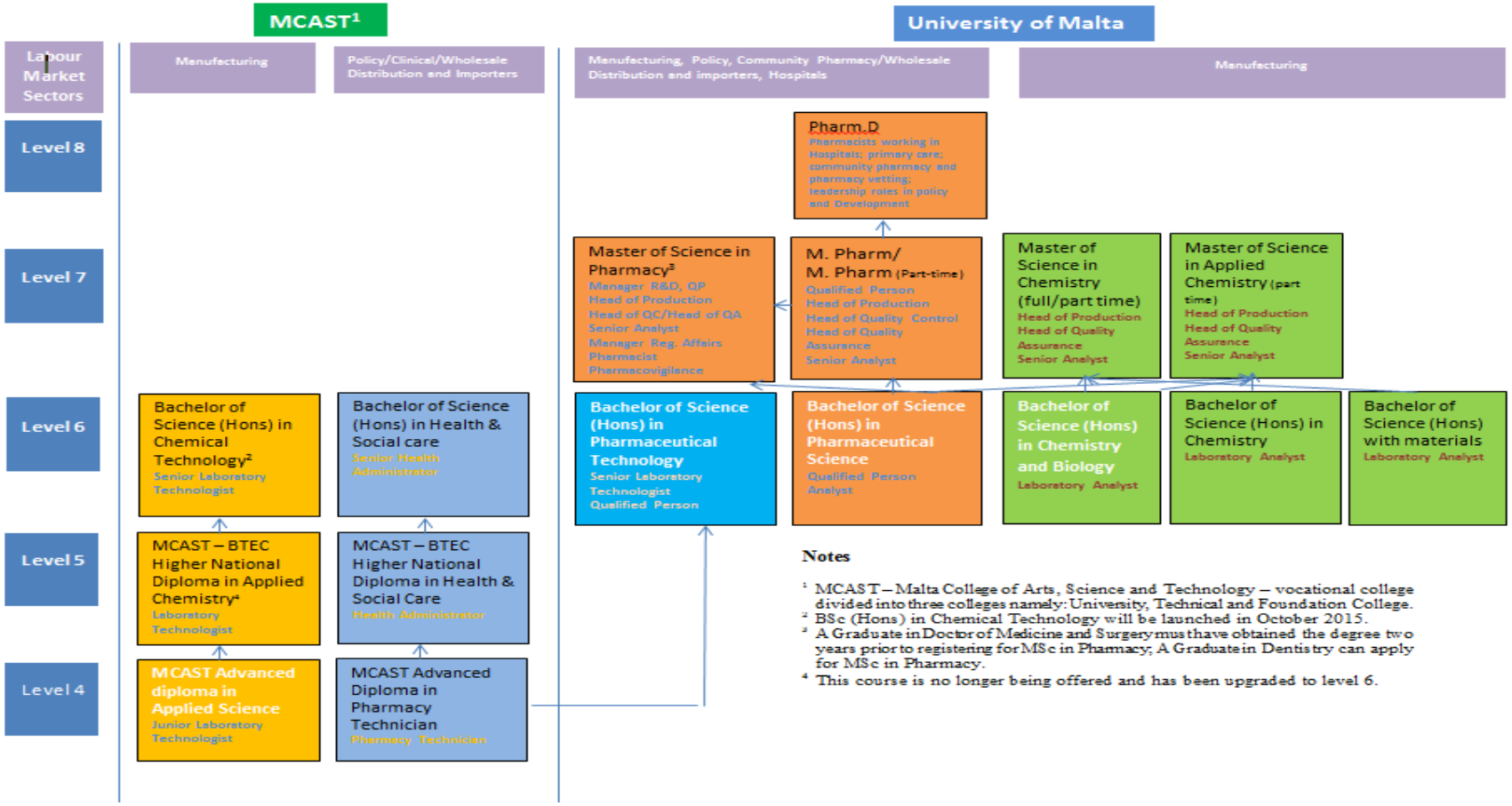
(a) To approve or reject, as he sees fit, starting material, packaging materials, intermediate, bulk and finished products;
(b) To ensure that all necessary testing is carried out and the associated records evaluated;
(c) To approve specifications, sampling instructions, test methods and other Quality Control procedures;
(d) To approve and monitor any contract analysts;
(e) To ensure that the appropriate validations are done;
(f) To ensure that the required initial and continuing training of his Department personnel is carried out and adapted according to need.

5. The Responsibilities of the Head of Quality Assurance

The Heads of Production, Quality Control and Quality Assurance generally have some shared responsibilities relating to quality including design, effective implementation, monitoring and maintenance of the quality Management system. These may include:

(a) The authorisation of written procedures and other documents, including amendments;
(b) The monitoring and control of the manufacturing environment;
(c) plant hygiene
(d) process validation
(e) Training
(f) The approval and monitoring of suppliers of materials
(g) The approval and monitoring of contract manufacturers and providers of other GMP related outsourced activities;
(h) The designation and monitoring of storage conditions for materials and products;
(i) The retention of records;
(j) The monitoring of compliance with the requirements of GMP; the inspection, investigation and taking of samples in order to monitor factors which may affect product quality;
(k) Participation in management reviews of process performance, product quality and of the quality management system and advocating continual improvement;
(l) Ensuring that a timely and effective communication and escalation process exists to raise quality issues to the appropriate levels of management.

Appendix 24: HEIs' Pharmachem course offerings



Source: *author's analysis, compilation and design 2016*

Appendix 25: Extract from the Structure of the International Standard Classification of occupations (ISCO-08)

The International Standard Classification of Occupations (ISCO) is one of the main international classifications for which the International Labour Organisation (ILO) is responsible. It belongs to the international family of economic and social classifications.

It is a tool for organising jobs into a defined set of groups according to the tasks and duties undertaken in the job. Its main aims are to provide: a basis for the international reporting, comparison and exchange of statistical and administrative data about occupations; a model for the development of national and regional classifications of occupations; and a system that can be used directly in countries that have not developed their own national classifications.

25 Information and Communications Technology Professionals

251 Software and Applications Developers and Analysts

2511 Systems Analysts

2512 Software Developers

2513 Web and Multimedia Developers

2514 Applications Programmers

2519 Software and Applications Developers and Analysts Not Elsewhere Classified

252 Database and Network Professionals

2521 Database Designers and Administrators

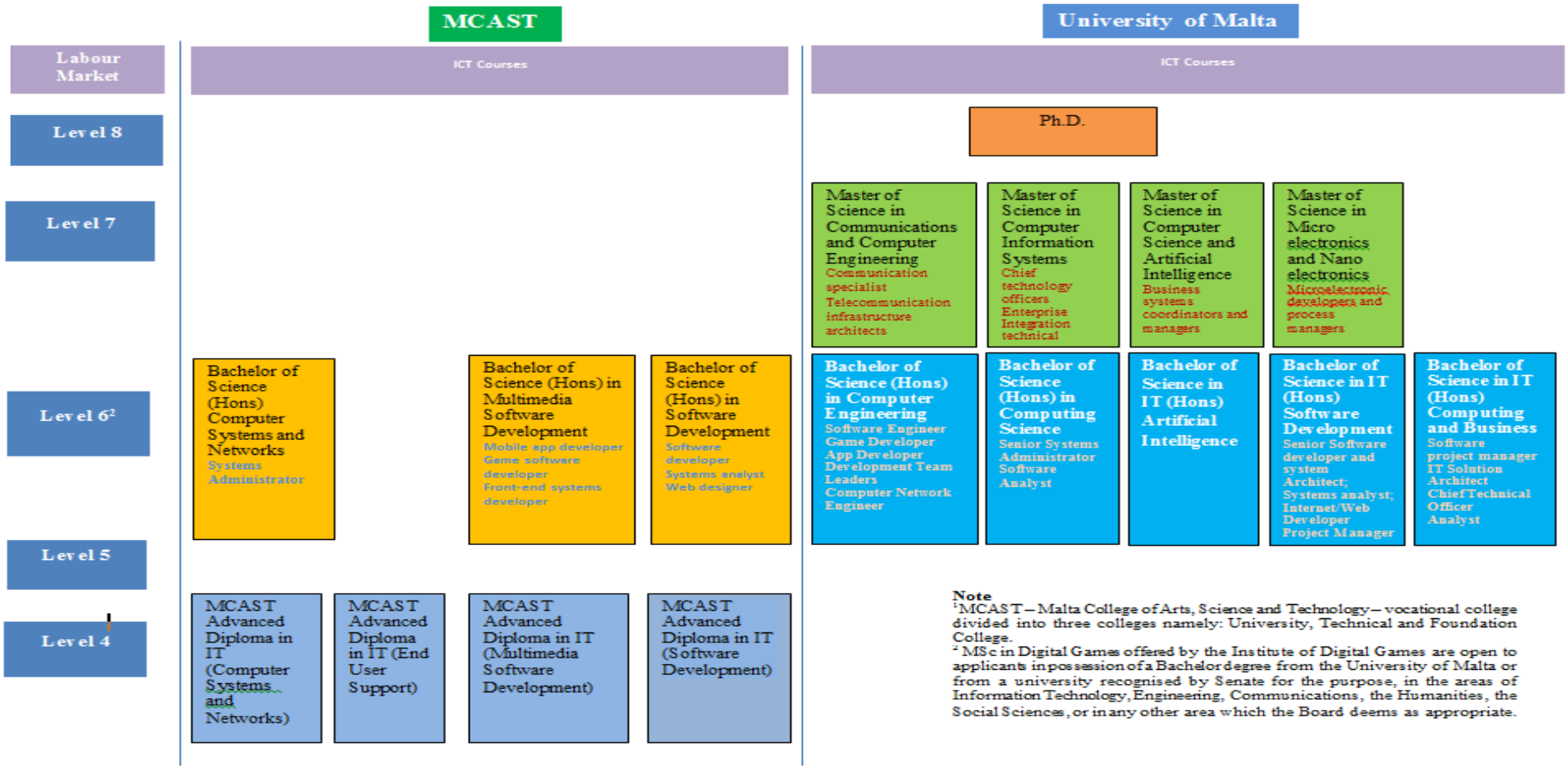
2522 Systems Administrators

2523 Computer Network Professionals

2529 Database and Network Professionals Not Elsewhere Classified

Available from http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_172572.pdf Accessed 30 July 2016

Appendix 26: HEIs' ICT Course Offerings



Source: *author's analysis, compilation and design 2016*